SEPTEMBER 1958
VOL. I, NO. 5

Problems of Economics

ВОПРОСЫ ЭКОНОМИКИ

English Translation of the U.S.S.R. Monthly Journal VOPROSY EKONOMIKI

IN THIS ISSUE

A Discussion of the Reorganization of the Machine-Tractor Stations

A New Stage in the Development of the Kolkhoz Regime

Help Economically Weak Collective Farms

Some Questions of Agricultural Price Formation

Experience of a Collective Farm Tractor Brigade

Collective Farm Purchase Procedure for Agricultural Machines

Questions of Preparing a Balance of the USSR National Economy

The Development of Soviet Machine Building

Some Problems of Accounting Control in Industrial Enterprises

Development of the Economy of the Federal People's Republic of Yugoslavia

Once More about the New Draft Program of the Austrian Socialist Party

UNIVERSITY OF HAWAII LIBRARY
OCT 9 '58

The Journal of the U.S.S.R. Academy of Sciences, Institute of Economics

AUTHORIZED TRANSLATOR AND PUBLISHER . . .
INTERNATIONAL ARTS AND SCIENCES PRESS
33 WEST 42nd STREET • NEW YORK 36, N. Y.

Problems of Economics

TABLE OF CONTENTS

VOL. I, NO. 5

SEPTEMBER, 1958

Page

DISCUSSION OF THE THESES OF COMRADE N. S. KHRUSHCHEV "CONCERNING FURTHER DEVELOPMENT OF THE COLLECTIVE FARM REGIME AND REORGANIZATION OF THE MACHINE-TRACTOR STATIONS" 3

A New Stage in the Development of the Kolkhoz Regime 3

R. KARTASHEV: Concerning the Reorganization of the MTS and the Sale of Machines to the Collective Farms 9

N. KAROTAMM: A Necessary and Timely Step 15

E. SKRIPITSYNA: A Sure Way Toward Improving the Utilization of Agricultural Machines 18

A. OMAROVSKY: Types, Organization and Location of Enterprises for the Repair of Agricultural Machines 24

B. SHUBKIN: Help Economically Weak Collective Farms 27

M. TERENTYEV: Some Questions of Agricultural Price Formation 31

L. ZLOMANOV: Experience of a Collective Farm Tractor Brigade 35

I. GAIDUKEVICH: Collective Farm Purchase Procedure for Agricultural Machines 39

A. NOTKIN: Questions of Preparing a Balance of the USSR National Economy 42

K. KLIMENKO: The Development of Soviet Machine Building 50

M. DMITRIEV: Some Problems of Accounting Control in Industrial Enterprises 57

V. ZOLOTAREV, V. PEKSHEV: Development of the Economy of the Federal People's Republic of Yugoslavia 62

A. RUBINSHTEIN: Once More about the New Draft Program of the Austrian Socialist Party 69

CRITICISM AND BIBLIOGRAPHY

N. RYAUZOV: A New Book of Economic Statistics 75

R. EVSTIGNEEV: The National Economy of Czechoslovakia in Figures 77

REVIEWS

T. ZASLAVSKAYA: Changes in Payments to Collective Farmers 80

SCIENTIFIC LIFE

L. GELBERG: Economic Investigations of the Institute of Housing, USSR Academy of Construction and Architecture 86

V. SHABALIN: What Scientists-Economists of People's China Are Doing 87

(Contents of the March, 1958, issue of "Voprosy Ekonomiki")

PROBLEMS OF ECONOMICS

English Translation of the U.S.S.R. Journal Voprosy Ekonomiki

EDITOR AND PUBLISHER: MYRON E. SHARPE

Problems of Economics is the English language translation of *Voprosy Ekonomiki*, journal of the Institute of Economics, U.S.S.R. Academy of Sciences. The translation is authorized by arrangement with Mezhdunarodnaya Kniga, Moscow.

Problems of Economics is a complete, literal translation, without editorial comment, of *Voprosy Ekonomiki*.

Twelve issues per year. Subscription rate: $50.00 per year (twelve issues); $4.50 per copy. $20 per year to persons associated with institutions already subscribing.

Editorial Collegium of the U.S.S.R. Journal *Voprosy Ekonomiki:*

L. M. Gatovsky (Chief Editor), P. A. Galubkov, N. N. Dyakonov, V. P. Dyachenko, A. E. Yezhov, V. A. Zhamin, A. G. Kulikov, A. N. Lavrishchev, A. P. Liapin, M. E. Moiseyev, G. A. Prudensky, T. S. Khachaturov. Technical Editor: O. Shvova.

Editorial Office: Volkhonka 14, Moscow, U.S.S.R.

The names of the editors and the editorial address of *Voprosy Ekonomiki* are given as a matter of information. The editors of *Voprosy Ekonomiki* have no connection with the translation and publication of the journal in English.

INTERNATIONAL ARTS AND SCIENCES PRESS
33 West 42nd Street, New York 36, N. Y.

© Copyright 1958 by Myron E. Sharpe. All rights reserved.

DISCUSSION OF THE THESES OF COMRADE N. S. KHRUSHCHEV "CONCERNING FURTHER DEVELOPMENT OF THE COLLECTIVE FARM REGIME AND REORGANIZATION OF THE MACHINE-TRACTOR STATIONS"

A New Stage in the Development of the Kolkhoz Regime

The plenum session of the CC, CPSU, which took place in February 1958, passed an historical resolution "concerning further development of the kolkhoz regime and reorganization of the machine-tractor stations." It approved the theses of Comrade N. S. Khrushchev's report on this question at the ordinary session of the USSR Supreme Soviet and decided to publish them for a national discussion. Measures outlined in these documents are of vital importance for socialist agriculture and for the whole national economy as well as for the realization of the program of communist construction drawn up at the 20th Congress of the CP.

The decision of the February plenum of the CC, CPSU, and the theses of the report present a striking picture of the successes of the Soviet people in the development of all branches of economy and culture, in the rise of the welfare of the working people. These documents reflect the results of victories of world historical significance by the kolkhoz regime, created according to Lenin's outstanding plan of cooperation. These documents indicate the path of further development of socialist agricultural production.

Reorganization of the machine-tractor stations is the most important component of the measures taken by the Party for the radical improvement of the guidance of the USSR national economy. As is known, in recent years the CP and the Soviet government, with the active support of the whole Soviet people, took a number of measures directed at the further development of the national economy, for strengthening the might of the country and for the uninterrupted rise of the people's welfare; for the victory of socialism in peaceful economic competition with capitalism. Last year reconstruction of industrial and construction management was carried out and it has produced positive results and opened new possibilities for a further rise of all branches of socialist industry. In the two years that passed since the 20th Congress of the Party, industrial production increased by 22%, while heavy industry production increased almost 24%. The national income during the same period increased 18% and the real income of workers and office workers per worker increased ten per cent. Reconstruction of the system of management, based on a consistent realization and creative development of the Leninist principle of democratic centralism in economic construction, increases further the role of the Union republics, local Party, Soviet, and labor union organs in the management of enterprises and construction sites, draws into the management of enterprises new millions of workers and office workers, and creates conditions for an even more rapid growth of the socialist economy.

On the same level with the most significant measures is the newly planned reorganization of the MTS and sale of agricultural machines to the collective farms. This is a direct result of the 20th Congress directive concerning the further rapid growth of agriculture.

Organizing a nationwide struggle for a great upsurge of agriculture, the CP gave a devastating rebuff to the conservatives and dogmatists who had lost touch with the realities of life, who resisted the Leninist line of the Party, resisted the realization of such important measures as the opening of the virgin and fallow lands, increasing the productivity of livestock breeding, the constant application of the principle of material incentives for members of the collective farms in the development of the collective economy, and the creative application of the Leninist principle of democratic centralism in the management of the national economy.

It is possible to say without any exaggeration that after the completion of mass collectivization of agriculture carried out on the basis of Lenin's plan of cooperation, the realization of measures worked out by the February plenum of the CC, CPSU, will be a new great step of exceptional importance in the development of socialist agriculture. The program of action drawn up by the plenum opens new possibilities for the realization of the greatest advantages of the agricultural artel as a socialist form of agriculture.

Since the September (1953) plenum of the CC, CPSU, our agriculture has been confidently moving ahead. During the 1954-1957 period our agriculture obtained 908,000 tractors (in terms of 15-hp. tractors), 293,000 grain combines and 143,000 silage-harvesting and corn-harvesting combines and many other agricultural machines and implements. The number of specialists with a college and specialized higher school education on the collective farms and the MTS increased more than three times. In the last four years the Soviet state invested in agriculture — into construction of productive buildings and structures, into payment for tractors, machines and equipment — 75.4 billion rubles (in constant prices) — ten billion rubles more than had been appropriated for this purpose during the Second, Third, Fourth and the first three years of the Fifth Five-Year Plan taken together. The Party carried out a number of measures directed at the constant strengthening and realization of material incentives, making agricultural workers interested in the results of their labor. The procurement and purchase prices of all basic agricultural products were considerably increased and the rates of agricultural taxes reduced. Beginning January 1, 1958, individual economies of the kolkhoz members, of workers and office workers, were fully freed from the compulsory deliveries of agricultural products. Introduction of the new order of planning in agricultural production and granting to the members of the collective

farms the right to introduce changes into the statute of the agricultural artels, which would take into consideration local conditions, opened the road to the production initiative and creative activity of the kolkhoz members.

Realization of these measures brought about ample results. Gross production of grain in the country in the last four years increased by 27% compared with the preceding four years. During the same period the gross production of potatoes increased 14%, of vegetables 39%, of sugar beets 37%, of flax for fiber 91%, of raw cotton 13%. The livestock also increased: on June 1, 1954, there were 55.8 million long-horned cattle (including 25.2 million cows) in the country, 33 million pigs, and 99.8 million sheep. On January 1, 1958, there were 66.7 million long-horned cattle (including 31.4 million cows), 44.3 million pigs and 120.1 million sheep. At the same time the productivity of the livestock has increased. For example, production of meat (taking into consideration the growth of numbers) increased 38% in the last four years (on the collective and state farms almost 80%), production of milk in the country as a whole increased 50% and on the collective and state farms, more than doubled. The task set by the January (1955) plenum of the CC, CPSU, in respect to the increase in the milk yield on the collective farms and the increase in meat deliveries was solved in three years instead of the expected six.

These data clearly demonstrate that as a result of measures taken by the Party our agriculture, overcoming its lagging and former neglect in some branches, attained significant successes. However these successes cannot be considered as sufficient, especially if we take as our point of departure the goals of the new stage in the development of the country's economy, and take into consideration the enormous growth of the whole national income expected in the next fifteen years, the interests of the further swift development of socialist industry, and the necessity of fuller satisfaction of society's growing demand.

The tasks set by the 20th Congress of the Party for increasing the production of grain and technical crops, for catching up with the United States in the next few years in per capita production of meat, milk, and butter, can be solved only on the basis of a further improvement of agriculture, a further increase in the level of mechanization of agricultural operations, the growth of labor productivity, increased yields of crops and livestock productivity, and the sharp reduction of the costs of agricultural production.

It is known that the decisive role in raising agricultural production is played by collective farms. They produce an overwhelming part of the gross and marketable production. Their part in the state procurement and purchase of grain amounts to more than 70% and in meat and milk — to two-thirds. Guided by the Marxist-Leninist theory that in the historical chain of events it is necessary to find that link with the help of which it is possible to find a correct solution of the task set, the Party with the greatest possible clarity determined such a link. Now for the further development of agriculture the basic link, upon which further successes depend, is the proposed reorganization of the machine-tractor stations, bringing the forms of production-technical servicing of the collective farms into correspondence with the new level of the productive forces in agriculture, with the increased needs of collective farm production.

Machine tractor stations played a tremendous historical part in the creation and strengthening of the kolkhoz regime, in the technical equipping of agriculture, in cementing an alliance of the working class with the peasantry. At the first stage of kolkhoz construction the Party found in the MTS the most suitable form for that period of a production union of the cities and villages, of industry and agriculture, a form which most fully combined the activity of the kolkhoz masses in the building up of their own collective farms with the organizational and technical assistance and guidance of the Party of the proletarian state. The MTS were the political and production force which helped the state ensure the victorious development of the kolkhoz regime, the strengthening of socialist production relationships in the villages, the creation of a new form of socialist organization of labor and production and the training of the personnel capable of moving forward large mechanized farms. In this way premises were created for even greater development of the productive forces of the Soviet villages. The experience of the MTS of the USSR in the organization of large-scale agricultural production is being widely used in the brotherly socialist countries carrying out cooperatization in agriculture.

However it would be a serious dogmatic mistake to consider that the MTS is the only, forever given and unchangeable form of production union of the state and kolkhoz sectors at all stages of kolkhoz development. Such a point of view would stand in complete contradiction with the basic thesis of dialectical materialism, with ever-developing Marxist-Leninist theory, and it would ignore the real processes of social development. Loss of touch with the practic of socialist construction, inability and unwillingness to take reality into consideration, to study it, and to make necessary conclusions on the basis of this study, inability to understand that practice is the best criterion of the correct ness of this or that theoretical statement, is the most characteristic feature of dogmatism with its poverty of ideas a its conservative inertia. V. I. Lenin gave a shattering char acterization of the dogmatists: "They have seen the books, studied them, repeated them by heart and understood absolutely nothing in them." ("Works," Vol. 29, p. 332.)

The Communist Party has been tirelessly struggling wit dogmatism. All its activity is a splendid example of the creative development of Marxism-Leninism. Its whole policy is a proof of the creative application of the Marxist-Leninist theory in correspondence with historical circumstances and concrete conditions. The envisaged reorganization of the machine-tractor stations is an example of the Leninist policy which ensures a timely turn in kolkhoz construction, a change which answers the new needs of social development.

Since the September (1953) plenum of the CC, CPSU, a struggle of the whole people has begun for the realization of the program prepared by the Communist Party, for the rapid growth of agriculture. This struggle signifies a new stage in the development of the kolkhoz regime. The acts of the February plenum of the CC, CPSU, clearly outlined the basic features of this stage. They were as follows:

1. The majority of the collective farms now have becom large and economically strong farms carrying on their production on the basis of the wide application of modern technique, the achievements of science and the experiment of the best specialists. In 1949 the country had more than 250,000 collective farms. After numerous mergers their number was reduced to about 78,000. The average number of able-bodied members of the collective farms per farm has increased, as their plowed area increased. The indivisible funds of the collective farms increased from 63. billion rubles in 1952 to 98.6 billion rubles in 1956.

2. The merged collective farms are much better equipp technically than they had been before the mergers. One-half of the trucks used in agriculture belongs to the collec

farms. The capacity of collective farm electric motors at the beginning of 1957 exceeded three million kw. and the value of their tractors, agricultural machines, cars, and other technical means reached 24 billion rubles.

3. The collective farms now have numerous cadres of highly trained specialists in plant breeding, livestock breeding, and mechanization, who are able to use skillfully modern technique and the achievements of science. The number of specialists with college and high-school special training exceeds 150,000.

4. Because of the measures taken by the Party for the improvement of the kolkhoz economy, the incomes of the collective farms have sharply risen and the material welfare of the kolkhoz members has improved. For example, the monetary incomes of the collective farms reached 94.5 billion rubles in 1956, or three times as much as in 1950, while the monetary income and the income in kind of the kolkhoz members from their collective and individual farms increased 33% per member in 1957, in comparison with 1953 (in comparable prices).

Thus today collective farms with their incomes measured in millions of rubles, with their large indivisible and productive funds, with their numerous skilled personnel, cannot be compared in any way with the economically weak and — in their majority — small kolkhozs of the first period in the kolkhoz development. In the process of constructing socialist agriculture and strengthening the collective farms the social-economic milieu in the villages changed radically. Under present conditions the MTS to a large degree have fulfilled their purpose. There is no need to have the MTS as an intermediary link for the state guidance of the collective farms. Now the state will influence collective farm production directly through the delivery of tractors, combines, and other machinery. It becomes possible to do away with the existing separation of the basic productive forces of agriculture — the labor force of the collective farms — from the basic means of production—tractors and other machines. This means that from now on on the same land there will not be two masters, but only one, applying complex technique in the interests of the fuller utilization of all resources of kolkhoz production. The sale of tractors, combines, and other agricultural machines directly to the collective farms will result in the further development and strengthening of the kolkhoz regime, the expansion of agricultural production and the reduction of its expenses. This measure will be a powerful economic stimulus for the development of economic self-support on the collective farms, for lowering the costs of agricultural products; it opens wide possibilities for the further development of the productive forces of the Soviet villages.

Individual economists several years ago suggested selling machines of the MTS to the collective farms and in this way to do away with the MTS. But under conditions when the majority of the collective farms were small and economically weak, when they were not able to acquire and properly utilize complex agricultural machinery, the abolition of the MTS inevitably would have resulted in weakening the collective farm economy and undermining the kolkhoz regime. The Party decisively rejected this suggestion as a mistaken and dangerous one for socialist agriculture.

The now envisaged reorganization of the MTS and the transition to a new, better form of productive-technical servicing of the collective farms has been prepared by the whole process of development of socialist agriculture in recent years. This reorganization will be carried out on the basis of the great successes of the kolkhoz regime reached with the assistance of the MTS which have played a great positive part in the realization of the program for a great upsurge in agriculture.

The Party considers that the reorganization of the MTS is a result not of the weakness but of the strength of the kolkhoz regime, of its great successes obtained with the help of MTS. Here lies the basic difference between the present formulation of the question of the sale of machines to the collective farms and suggestions which were made several years ago by individual economists. Moreover the question now is not of immediate abolition of the MTS, but of their gradual reorganization, undertaken with the purpose of improving production-technical servicing of the collective farms, considering special features of different zones and regions and the level of economic development of individual collective farms.

Guided by Marxist-Leninist science, the Communist Party every day is strengthening its ties with the masses, with life, and, in correspondence with changing circumstances, makes decisions ensuring the forward movement of Soviet society toward communism. Here lies the power of our great Party, the force and vital power of its decisions, reflecting the fundamental interests of the Soviet people. The envisaged reorganization of the MTS will strengthen the ties between the cities and villages, further cementing the alliance of the working class with the peasants. Socialist production relationships in the villages will enter a new, more mature phase of their development.

The acts of the February plenum of the CC, CPSU, present the method for MTS reorganization. It is proposed to reorganize the MTS gradually, depending upon concrete conditions of various regions, into repair-technical stations (RTS), entrusting them with repair of complex technical means of the collective farms, supply (through sale) of the collective farms with new machinery, spare parts, fuel, fertilizers, chemical poisons for the control of pests, and other materials, as well as the leasing out of machines which collective farms do not have. For a certain return these stations should take upon themselves the technical servicing of the collective farms, helping them to use properly the available technical means.

In the districts where there are several MTS it is advisable, after their reorganization, to have, as a rule, one RTS. In the future it may be possible in some districts where the number of the collective farms is small, to effect a merger of them. In large districts where there were several MTS the repair shops of these MTS may become branches of the central repair shop, while garages and other buildings may be used as stores and warehouses for selling machines, spare parts and materials. Where they are not needed, they may be sold to the collective farms or transferred to the state farms.

At present the MTS, beside current agricultural operations, carry out irrigation, melioration and road construction work, digging ponds and water reservoirs, improving meadows and pastures. Outside of the black-earth belt of the RSFSR, in White Russia, in the Baltic Soviet Republics and in a number of other regions of the Union they mine peat and limestone. In the southern regions, with well-developed orchards and vineyards, they carry out planting work. All this work is as a rule non-recurring and it would not be advisable for collective farms to buy machines for such work. It will be better to leave such machines at the repair-technical stations so that they may rent them out to the collective farms or carry out such work themselves on a contract basis. In individual regions, for example, in the north and northwest of the country as well as in a number of regions of Middle Asia and Transcaucasia, probably it

would not be profitable for many collective farms to buy such machines as grain combines, because the area under grain on large collective farms is small and one combine may serve several collective farms. In such regions the RTS should have several combines each for servicing collective farms with small areas under grain.

In carrying out the sale of machines to the collective farms and in reorganizing the MTS the length of the period for the realization of these measures in individual regions of the country should be established after full consideration of local conditions and the characteristics of different districts and collective farms, avoiding stereotyped solutions, orders from above, and a rush.

The sale of agricultural machines to the collective farms is a business of great economic-political importance which touches upon the interests of millions of collective farm members as well as national interests. Completion of this task will require from the central and local organs a deep and full study of the economic potentialities of each district, of each collective farm, and great organizational work in carrying out the February decisions of the plenum of the CC, CPSU.

The decisions of the February plenum of the CC, CPSU, and the theses of Comrade N. S. Khrushchev have tremendous scientific-theoretical importance. Here a number of problems of Marxist-Leninist theory received further elaboration and creative development, especially the problems of two forms of socialist property, their relationship and interaction, the theory of the state under socialism, etc. The solution of these questions will be a great contribution to the treasure-trove of Marxist-Leninist science; it will make possible seeing correctly the perspective of further advance of the country along the road to socialism, removing completely the dogmatic understanding by some economists of the character and role of these two forms of common, socialist property and their transformation at the higher phase of communism into one, communist property.

It is quite clear that the sale of agricultural machines to the collective farms is a progressive measure which will contribute to the development and strengthening of the collective-cooperative form of socialist property, the growth of indivisible funds of the collective farms as one of the basic sources of the invincible power and strength of the kolkhoz regime. This process is an objective condition of the comprehensive growth of socialist agriculture as one of the most important parts of the program of communist construction. Yet some economists up to the last moment tried to place some sort of theoretical veto on the question of the possibility of transferring the basic tools of labor to the collective farms. They continue to proclaim the necessity of MTS existence during the whole period of socialist construction and transition to communism, first of all as a form which ensures concentration of the basic means of agricultural production in the hands of the state.

Partisans of the view that the sale of tractors and other agricultural machines to the collective farms is incompatible with the interests of communist construction wrongly interpret V. I. Lenin's opinions outlined in his famous work "On Cooperation." In his development of a cooperative plan for the socialist transformation of agriculture Lenin emphasized that the growth of cooperation for us is identical with the growth of socialism, that under the existing regime cooperative enterprises are not different from socialist enterprises. He placed a scientific base under an important theoretical thesis that cooperatives are socialist enterprises under conditions of property concentration of the means of production in the hands of the proletarian state. Some economists assert that Lenin had in view concentration of agricultural machinery in the MTS. However, at the time when Lenin wrote his paper "On Cooperation," there were no MTS, there was no movement to join the collective farms. At that time the economy of the country had several coexisting economic regimes and the question "who will finish whom" was far from being answered. Lenin on several occasions emphasized the thought about the necessity of strengthening state property by all means, having in view first of all the main economic commanding heights of the national economy: large-scale socialist industry, transport, land and its mineral wealth, banks, etc. At that time Lenin did not set for himself the task of working out concrete, practical measures, aimed at the production-technical servicing of the collective farms and utilization of agricultural machines on these farms.

The best answer to those who like to parade quotes as a formal proof, who cling to the old and do not want to notice the new was given by Vladimir Ilyich Lenin himself. Ridiculing dogmatism in all its manifestations, he used to speak with powerful irony about the scholastic "who understands absolutely nothing in the political economy though he is full of quotes from books, as a scientist in whose head is, so to speak, a drawer from which he picks out quotations; but if there is a new combination which has not yet been described in books, he is lost and gets from the drawer some quotation which has no relation to the given case" ("Works," Vol. 29, p. 335).

It is impossible to demand from the classics of Marxism-Leninism ready answers to all questions of life, to expect from them worked-out schemes of development of socialist agriculture in all their concrete variety and all their details. Marxism-Leninism is not an ossified dogma, but a living guide to action. The Party teaches and proves by the example of its everyday activity that it is necessary to apply creatively and develop Marxist-Leninist theory on the basis of a deep study and scientific generalization of new processes and phenomena, of the whole experience of socialist construction.

The suggestion of some comrades about the transformation of collective farms into state farms in view of the fact that the national form of socialist property is a more mature form than the cooperative-kolkhoz form and that such a transformation would make it possible to have only one, state form of property — such a suggestion is wrong. As early as his speech about cooperatives at the Ninth Congress of the Party Lenin categorically rejected advices to turn cooperatives into state institutions. Later the Party several times expressed its negative attitude toward such suggestions, considering it wrong to oppose state farms to collective farms.

The apprehensions of some economists that the sale of agricultural machines to the collective farmers, that is, strengthening and improving kolkhoz-cooperative property would result in weakening state property, national property — such apprehensions are baseless. Such a formulation of the question is wrong theoretically and harmful practically because it is based on the assumption of an opposition of these two forms of socialist property to each other. This is in radical contradiction to Marxism-Leninism which considers both these forms as socialist property in their organizational unity. Of course, these two forms differ in their degree of socialization of production, but both of them are socialist and serve the interests of building a communist society. The sale of agricultural machinery to the collective farms undoubtedly will bring kolkhoz production to a higher level of socialization and will contribute toward bringing cooperative-kolkhoz property closer to the level

of national property. It is wrong, however, to think that the transition to the higher stage of communism demands the preliminary transformation of the collective farms into state farms. This does not follow from the theory and practice of communist construction. As Soviet society progresses toward communism, both cooperative-kolkhoz and state forms of ownership should grow and improve. Strengthening and developing kolkhoz property means at the same time strengthening the whole socialist system of economy. The tremendous influence of the MTS reorganization lies exactly in the fact that it opens the road to better utilization of cooperative-kolkhoz property for expediting communist construction for its development into a higher form of national communist property.

The kolkhoz regime has not only not exhausted all its potentialities for raising production, but unfolds newer and newer reserves for the development of the productive forces, increasing the productivity of social labor. In the process of further developing the agricultural artel the conditions are created for transferring kolkhoz-cooperative property directly into communist property.

The road to communism lies through strengthening of both national as well as kolkhoz property. The growing, improving state property and the rapidly developing cooperative-kolkhoz property form at a higher phase of communism one, communist property.

This most important theoretical conclusion is given a scientific basis in the documents of the February plenum of the CC, CPSU, and represents a further creative development of the Marxist-Leninist theory. It is based on a deep study of the real processes in the development of kolkhoz production.

Special attention should be given to the investigation of those changes which took place in the nature and purposes of the indivisible funds of the collective farms during the history of kolkhoz growth. Not only quantitatively, but also qualitatively kolkhoz property has changed from what it had been 25-30 years ago. In fact, what did the property of the collective farms consist of, say, in 1929-30? This was a simple aggregate of the collectivized peasants' means of production — horses, plows, harrows, and some utility buildings in the yards. Of course, even at that time kolkhoz property was playing a progressive role because it made it possible to carry on social production and made impossible exploitation of man by man. However, between such a period and the present one lie years of intensive struggle for the development and strengthening of the kolkhoz regime, for the growth of its economy, for the blossoming of the material and spiritual forces of the Soviet villages.

The existing property of the collective farms was created by the collective labor of the members of such farms under the guidance and with the active participation of the working class, with the participation of the whole Soviet people. It grew and became strong as a result of the development of the social economy. Indivisible funds of the collective farms are now valued at 100 billion rubles compared with 1.5 billion rubles of the membership shares at the formative period of collective farms.

The structure of the collective farms' indivisible funds changed so much that it is difficult to recognize it, as may be seen from the data following (data for January 1st of the corresponding year, % of the total).

	1953	1956	1957
Draft animals	38.5	7.7	6.4
Productive cattle, poultry, bees		17.9	17.5
Agricultural machinery and implements, mechanical prime movers	7.2	6.6	6.9
Inventory, equipment	7.5	7.3	7.2
Means of transportation	10.3	11.8	11.8
Buildings, structures, permanent plantings	36.5	48.7	50.2

This table shows qualitative changes of the basic funds. Here are reflected the growing expenditures of the state on the development of kolkhoz production, the growing expenditures of the kolkhozes on construction not only of production objects, but also of objects which have cultural and public utility purposes — schools, hospitals, clubs, etc.

After the sale of agricultural machinery to the collective farms (their value at preliminary estimates is from 18 to 20 billion rubles) further substantial change in the structure of the kolkhozs' basic funds will take place. For example, the part of agricultural machinery and prime movers will rise from 7% to about 22% and will continue to rise as the collective farms are more and more supplied with new machines.

With the growth of kolkhoz production the part of investments into interkolkhoz enterprises will occupy a larger and larger part in the indivisible funds.

At the present stage of agricultural development electrification of the processes of plant breeding and livestock breeding will grow more and more, which means that the collective farms will build electrostations — together with the state or through combining means of several collective farms. With the growth of commodity production it will be necessary to organize on a large scale the primary processing of agricultural products not only in the state plants, but also in the kolkhoz and interkolkhoz plants. The growth of construction for the purposes of production, culture, and public services in the kolkhoz villages will also demand development of the kolkhoz industry of building materials. It will be, of course, more advantageous to build large mechanized plants — enterprises which may require the combined efforts of several collective farms. This means a substantial development of interkolkhoz property with its higher level of collectivized production.

Thus, under present conditions indivisible funds of the collective farms, in essence, will approach more and more the character of national property. First of all the kolkhoz peasantry itself is interested in the increase of the indivisible funds. This answers the fundamental needs of the peasantry. The larger the indivisible funds, the greater will be the number of machines on the collective farm; the better various processes will be mechanized; the easier will be the work of the collective farm members; the higher will be the productivity of labor and the common economy will develop more rapidly. The labor of the collective farm members based on the wide application of modern technique will approach in character the labor of industrial workers.

In the future the common economy of the collective farms will develop to such a degree that there will be no necessity for the members to have personal subsidiary economies; the collective farms gradually will change to a system of guaranteed monthly wages with a high degree of socialization not only of agricultural production, but also of the branches servicing the cultural and other needs of the kolkhoz members.

Leninism teaches that with the advance toward communism economic management will be built more and more on democratic principles. Both the collective farms and the state farms are in agreement with the socialist principle of management. In the state farms through increasing the role of workers' collectives, labor unions, and other social

organizations it is possible to make the participation of each worker in the management of the economy even more active. The kolkhoz form is also in agreement with this socialist principle. A collective farm has a board elected by the members of the kolkhoz and responsible to them and all the most important questions are decided by the general meeting of the members. The cooperative form on farms helps the development of social self-activity and initiative in the increase of production.

In the interests of further growth of socialist agriculture it is necessary to strengthen and develop collective farms and state farms, to use fully the potentialities of both these forms for a quicker achievement of an abundance of agricultural products and raw materials for industry, for the successful solution of the tasks of communist construction.

The reorganization of the MTS raises in a new way a number of problems connected with the improvement of material-technical supply of the collective farms, the improvement of their finances with the help of state bank credits.

The new method of supply of collective farms with machinery will immeasurably increase the responsibility of industry producing agricultural machines. From now on the collective farms will decide themselves which machines and how many of them to buy. This will compel agricultural machine building plants to improve the quality of their products, to consider the concrete needs and zonal peculiarities of agricultural production. In particular the collective farms will be interested in obtaining an assortment of machines which to a maximal degree save living labor and have a high productivity and universality. Here we have in view first of all production of autochassis and mounted [navesnye] implements for the use of which hitchmen (attachers) are not needed.

Serious attention should be paid to the question of fixing the prices of machines transferred from the MTS and for the new machines produced by industry. In the last case, in fixing prices, the costs and creation of certain accumulations in industry should be considered.

In the theses of Comrade N. S. Khrushchev's report an important place is given to the question of changes in the system of state purchases of agricultural products. Under the existing system certain forms of interrelations between the state and collective farms have been established. The state services the collective farms through the MTS, cultivating the land of the kolkhozs with tractors and other machinery, supplying fuel and fertilizers, in other words, with everything that the collective farms need for social production. In turn the collective farms and the state farms ensure the need of the country in agricultural products. A substantial part of agricultural products comes through the MTS in the form of payments in kind for the work done by the MTS. It is enough to say that, for example, the state obtains annually as payments in kind to the MTS about a billion poods of grain, not mentioning other products.

Agricultural products which the state used to obtain from collective farms as payment in kind for the work done by the MTS will now be obtained directly from the collective farms as payment for machines, spare parts, fuel, fertilizers, etc. Yet the country must obtain not less but more agricultural products than before, but on a different basis, under a different, more elastic system of settling accounts.

The question of forms of procurement of agricultural products as well as the question of procurement and purchase prices now become questions of great state importance. The character of the procurement system also will change. Now when the needs of the country in certain products are not yet fully satisfied, the state has to establish plans of procurement for each district. But this is a temporary phenomenon. Now conditions have been created for a rapid growth of collective farm production, for the rapid development of their economy. This means that from year to year the amount of products available in the country will also increase. The time is not far off when, in full measure, the needs of the country in all agricultural products will be ensured and quite sufficient reserves will be created. It will be possible for the state to buy grain, meat, and other products in those districts where they are cheaper because their cost of production is lower. This will create conditions for wider production specialization. And it is known that specialization makes it possible to carry out production on a highly mechanized basis, to increase labor productivity and to lower costs of production per unit of product.

The volume of procurement of agricultural products depends upon the level of production. The reorganization of the MTS creates conditions for increasing the production of grain and other products. Under the new system of production-technical servicing of the collective farms machines will be used more rationally, the productivity of labor will increase, and production will expand. This should effect a reduction in the cost of agricultural products. As a result the state will be able to lower the prices of agricultural products and industrial goods and in this way to increase the welfare of the people.

At the new stage of development of the kolkhoz regime commodity-money relations between the state and the collective farms will be greatly broadened, the possibility of a wide application of economic levers and stimuli for the development of agricultural production, connected with the action of the law of value, will be ensured. The development of commodity circulation will not prevent the transition from socialism to communism as some economists thought up to recent times. On the contrary, the dialectics of the socialist economy is such that the dying off of commodity-money relations at a higher stage of communism will come only through great development of monetary circulation and trade. The intensification of commodity-money relations will result in a further application and strengthening of cost control on the collective farms and will make it possible to develop the struggle for an increase in agricultural production and for lowering the costs of agricultural products.

The decision of the February plenum of the CC, CPSU, served for the Soviet economists as an active program of scientific-research work in all the main directions of the political economy of socialism of the theory and practice of communist construction. The decisions of the plenum of the CC, CPSU, require economists to raise the level of study and generalization of the vital processes of Soviet development on the way to communism.

The part of the economic scientific-research institutions in the study of the basic problems of the further development of agriculture is exceptionally great. Yet the theoretical investigations of these problems are far from satisfying the existing needs of agriculture. The cause of this is the weak connection of a number of institutions with the practical activity of the collective farms, the MTS, and the state farms. The same may be said about the Institute of Economics, USSR Academy of Sciences. In its plan of themes to be studied not enough place is given to the study and—and this is even more important—to the scientific generalization of the new phenomena in the field of economic relationships of the collective farms and the MTS.

The Academy of Sciences should develop more actively and deepen its scientific investigations of the problems of these two forms of socialist property and their development; it should study questions of the further development of

kolkhoz production which arise with the reorganization of the MTS. It should raise the level of studies in respect to the action of the law of value and price formation in agriculture, questions connected with the application of economic self-support on the collective farms and utilization of economic stimuli for increasing agricultural production. It is important to ensure the most direct and wide participation of economists in the careful and comprehenisve preparation of materials and concrete suggestions for the third all-Union congress of kolkhoz members which will be summoned at the beginning of 1959 for consideration of timely questions of kolkhoz production and necessary amendments to the model statute of the agricultural artel.

The February plenum of the CC, CPSU, considers it necessary to carry out a national discussion of the envisaged measures at the general meetings of the collective farms, MTS, and state farms, industrial enterprises and construction sites, in scientific organizations, educational institutions, military units and establishments, and on the pages of newspapers and magazines. The editorial board of the magazine "Problems of Economics" opens the pages of this issue to the scientific workers, specialists, and practical workers of agriculture for a discussion of the theses of the report by Comrade N. S. Khrushchev.

The great leader of the Communist Party, the founder of the Soviet state, V. I. Lenin, considered life as the best teacher. He used to say "We should follow life, we should give full freedom to the creative genius of the popular masses." ("Works," Vol. 26, p. 229.) This principle of Lenin always was, is, and will be the guiding star of the Communist Party in its struggle for building communist society. There is no doubt that the discussion of the report's theses by the whole people will be fruitful and once more will demonstrate the monolithic unity of the Party and the people.

R. Kartashev:

Concerning the Reorganization of the MTS and the Sale of Machines to the Collective Farms

Under the guidance of the Communist Party and as a result of the constant carrying out of Lenin's teachings, our country has obtained tremendous successes in all branches of economic and cultural construction, in raising the material welfare of the Soviet people. For the first time in the history of humanity a socialist society was created in the USSR in which the collective property in the means of production reigns supreme and exploitation of man by man is fully liquidated. Placing a socialist foundation under peasant farms with a small marketable surplus and creating a large-scale mechanized socialist agriculture was a Soviet victory of world-wide significance.

The continuous growth of agriculture at all stages of development of the Soviet economy was and is a subject of special care of the Communist Party. The creation of the kolkhoz regime in the USSR became possible through tremendous material and financial help to the villages on the part of the Soviet state. Preferential development of socialist industry and first of all of heavy industry at a higher tempo than agriculture made it possible to place under the agriculture of our country a new, strong material-technical basis and carry out technical reconstruction of agricultural production on the basis of the utilization of modern technique. The Party consistently set a Leninist course for strengthening the alliance of the working class and peasantry, seeing in it the highest principle of the dictatorship of the proletariat.

After the victory of the socialist revolution new relations were established between the cities and villages, industry and agriculture, the economic bonds between industry and agriculture were strengthened. As a result of peasants joining the collective farms, which took place with the help and under the guidance of the working class, a new class of socialist society was created —the kolkhoz peasantry, which, just as the working class, is carrying out production on the basis of socialist property and collective labor. This immeasurably strengthened the alliance of the working class and peasantry and cemented the economic and political bonds of socialist industry and agriculture.

Collective property has been irrevocably established in Soviet agriculture; socialist production relations have been strengthened; collective farms, MTS, and state farms have matured economically and organizationally.

Highly mechanized agriculture has ensured a substantial growth of the gross and marketable production of agriculture and livestock breeding; it proved its unquestionable advantages not only over small farms, but also over large-scale capitalist agricultural production. The marketable part of grain production in 1956, compared with 1913 (the year of the best harvest in pre-revolutionary Russia) increased three times, wheat—five times, sugar beets and potatoes—almost three times, raw cotton, sunflowers and vegetables—six times, meat—twice, milk and wool—three times. Especially great successes in Soviet agriculture were achieved during the last four years as a result of the realization by the Communist Party of measures directed at the intensification of material-technical help to agriculture, giving full scope to the initiative of the rural laboring population and increasing material incentives for them for increasing production. Carrying out these measures made it possible to obtain a great advance in all branches of agricultural production. They brought into action innumerable resources, hidden deep inside Soviet agriculture; they mobilized the rural laboring population for the realization of great tasks set by the Party, tasks of creating in the near future an abundance of foodstuffs for the population and of agricultural raw materials for industry.

The laboring people of the USSR applied all their efforts in order to realize in a short time the plan of development and strengthening of agricultural production, outlined by the Party. This was especially clearly seen in the broad popular movement for the opening of the virgin and fallow lands and for the realization of the Party's appeal to catch up with the United States in per capita production of meat, milk, and butter in a short time.

Carrying out the work of improving agriculture with constant energy, mobilizing the Party and the whole Soviet people in the struggle for the creation of an abundance of agricultural products, the CC of the Communist Party, on the basis of a deep analysis of all aspects of Soviet society, creatively develops Marxist-Leninist teachings concerning the road of further advance of socialist agriculture and decisively removes everything that is an obstacle for the use of the strong points of the kolkhoz regime.

At the recent session of the plenum of the CC, CPSU, new important measures for the development of the kolkhoz regime and the reorganization of the MTS were worked out. These are a component part of the measures carried out by the Party for the further development of socialist agriculture. The CP always took as a point of departure the fact that in the process of struggle for the victory of socialism

it is necessary, in correspondence with circumstances, consistently to improve and change the forms of guidance and management of production, to study deeply and generalize the experience of socialist construction, to work out and apply new, more effective methods of production organization.

As is known, during the first period of mass collectivization the kolkhozs were created on the basis of bringing together the simplest means of production. As the country became industrialized and agricultural machine building developed, the villages began to receive more and more tractors and other agricultural machines. However at that time the method of sale of the complex agricultural machines directly to the kolkhozs was unacceptable, because young, weak kolkhozs were not able to purchase and utilize these machines. On the other hand industry was not yet able to produce such a number of machines that all kolkhozs could be supplied with them. In the process of kolkhoz construction another, more appropriate form (under conditions of that time) of arming collective farms with agricultural machines was found. As is known, the CP, since the first days of Soviet power, rendered help to the collective farms with agricultural machines through state farms, machine lending centers and tractor columns. The first tractor column for rendering help to peasants was created on the Shevchenko state farm, Odessa region. The tractor group of that farm served associations of peasant farms, rendering substantial help to them in carrying out basic agricultural work. The peasants of the Odessa region wrote to the newspaper Izvestia (November 22, 1927 issue): "After observing the work of tractors we do not want to work on small farms anymore, but decided to organize a collectivized tractor farm on which there will be no scattered pieces of peasant land." On the basis of this tractor column in 1928 our country's first Machine-Tractor Station was created. In 1930 there were already 158 MTS, in 1932—2,446, in 1941—more than 7,000, in 1957—about 8,000.

The MTS played an extremely important part in the creation and organizational-economic strengthening of the kolkhoz regime. They supplied collective farms with machines, ensured their rational utilization, were conductors of technical progress and organizers of large-scale production. The Soviet state, arming its agriculture with new technique through the MTS, carried out extensive organizational-economic and political work in the villages, trained numerous cadres of mechanics, and conducted the great work of raising the level of agriculture as a necessary condition for increasing the production of agricultural products and raising the productivity of labor in agriculture. A significant part in the strengthening of the kolkhoz regime was played by political departments of the MTS (especially in 1933 and 1934). The MTS were an important source for obtaining grain and other products as well as raw materials for industry and helped to strengthen the finances of the Soviet state.

During the first period, MTS activity on the collective farms was limited mainly to the mechanization of grain production; later they began to carry out more and more work in other branches of kolkhoz production. For example, in the pre-war years the MTS carried out about 90 kinds of agricultural work in the collective farms; now they carry out more than 200 kinds. In 1957 the MTS carried out on the collective farms almost all the plowing, spring and summer sowing, a larger part of the harvesting of grains, technical and oil seed crops, and many other kinds of work. Through the MTS the Soviet state and socialist industry rendered tremendous material and financial help to the collective farms, freeing them from the necessity of buying machines and fuel, constructing buildings for the storage and repair of machines, and from training mechanics.

***

The great historical importance of the MTS consisted first of all in helping to cement the alliance of the workers and peasants in their struggle for building socialism and immeasurably strengthening political and production bonds between cities and villages, industry and agriculture, on the basis of close production relations.

However, as a result of the great changes that have taken place in agriculture in recent years, the role of the MTS in collective farm production has changed. Having fulfilled with honor their mission in the historical transformation of agriculture, the MTS no longer have the political and organizational importance which they had at the first stage of kolkhoz construction. The question of the collectivization of peasant households was solved long ago in the Soviet Union. There is no one left to be persuaded by the workers of the MTS of the advantages of large-scale highly mechanized collective farms, because the personnel of the kolkhozs themselves understand this well, while members of the kolkhozs do not imagine life outside of collective farms. At present the collective farms have a sufficient number of specialists; the guiding personnel of the collective farms has become strong and has accumulated extensive experience in managing collective farm affairs. In view of this there is no necessity of carrying out organizational-economic guidance of the kolkhozs through the MTS.

The situation in respect to supplying the country with products of agriculture has also changed. The Soviet state can ensure the needs of the country in food and agricultural raw materials through buying the necessary products from the collective farms. To a considerable degree this is made easier by the rapid expansion of production for the market on the state farms. Consequently there is no need to obtain agricultural products through the MTS, not to mention the fact that now, when the purchase prices of kolkhoz products obtained as payment in kind have become more expensive than state farm products, the MTS are no longer the main source of obtaining cheap grain.

The existing relationships between the MTS and collective farms in many cases began to be a brake on the development of the productive forces of agriculture, to stand in the way of a more efficient use of machines, to make more difficult the application of economic self-support in the MTS, and to make it necessary to maintain an excessively large managerial apparatus and waste state means.

One of the main difficulties in the relationship established between collective farms and the MTS is the two-headed and parallel management of kolkhoz production and of material-technical means in agriculture.

The management of kolkhoz production is in the hands of the kolkhoz board, on the one side, which directs the largest part of the working force, land, cattle, various agricultural machines, etc.; on the other side, it is in the hands of the MTS, which disposes of the tractors and other agricultural machines. This cannot fail to result in serious difficulties in production.

In modern farm economy much depends upon the successful work of tractors and agricultural machines. In a number of districts the relations between collective farms and MTS are such that leaders and specialists of even large collective farms and MTS have to harmonize and solve between themselves even such a question as where to send this or that tractor and how to use it. To a large degree this situation was brought about by the existing relationships between collective farms and MTS on the basis of standard contracts. The practice of recent years has shown

that beside making the management of the collective farms and the MTS more complex, such relationships lead to a wasteful utilization of the material-technical means and labor resources of agriculture and are not in the interests of the state and of the collective farms.

The MTS, carrying out a larger part of the work on the collective farms, do not have proper responsibility for the final result of kolkhoz production, for increasing yields with the smallest outlays. Considerable difficulties in the work of the MTS are also connected with existing methods of planning tractor work. Formerly in the state plan the volume of tractor work was established in terms of hectares of plowed land; the volume of the most important tractor work in terms of the kind of work was also established, and these assignments were brought down to the MTS level. With the transition to the new method of planning only the volume of tractor work in terms of ha. of plowed land is fixed and brought down to the level of the MTS. Undoubtedly it was a good thing insofar as the collective farms and the MTS acquired more freedom in determining the kind of work to be carried out on the collective farms. However at present we have reached a situation when, at the time of making a contract with the collective farm, the MTS has to plan the volume of tractor work in terms of ha. of plowed land on the basis of coefficients which come to them from above as well as coefficients worked out by the MTS together with the collective farm. Coefficients of the volume of tractor work which come to them from above before the collective farms decide the size of the sown area, agricultural-technical measures and plans for the development of the livestock, frequently do not coincide with the coefficients established by the collective farms and the MTS themselves. In view of this the MTS are compelled to distribute the volume of tractor work approved from above among the collective farms and frequently to impose upon the collective farms kinds of work which they do not need. In the majority of cases the MTS achieve this mainly through a considerable overfulfilling of the volume of light tractor work such as harrowing and cultivation, as a result of which labor, fuel, and other material means are wasted. The outcome of this is that the directors of many MTS pay attention chiefly to the fulfillment of the plan of work in terms of ha. of plowed land, without thinking how this or that kind of work influences yields of various crops.

To prove this point let us cite data concerning the work of the adjoining Bobrinets MTS and Rosa Luxemburg state farm in Kirovgrad region. Natural conditions on their farms are approximately the same. Trying to fulfill the plan given to it from above in terms of ha. of plowed land, Bobrinets MTS harrowed 108,000 ha. of land compared with 48,900 as was provided in the contract with the collective farms. The corresponding figures of cultivation and harrowing before sowing were 31,200 ha. and 17,500 ha. As a result of this Bobrinets MTS carried out a total of 152,900 ha. of tractor work in terms of ha. of plowed land or 5.5 ha. for each ha. of sown area. Rosa Luxemburg state farm carried out only 3.7 ha. of tractor work per ha. of plowed land. In spite of the fact that on the collective farms served by that MTS more tractor work per ha. was done than on the state farm, the yields of basic crops on the collective farms were considerably lower than on the state farm.

The difficulties of the actual management of kolkhoz production became especially apparent after the merger of many collective farms, so that some MTS now serve only one or two collective farms. In recent years this encouraged a search by practical agricultural workers for a new relationship between the MTS and the collective farms: tractor-field cultivation brigades and complex brigades, mutual planning of work as a result of the transfer of MTS machines to the collective farms, creation of one management for both the MTS and the collective farm—all these were tried. For example, in Shushenskaya MTS, Krasnoyarsk region, and Deminsk MTS, Stalingrad region, in 1956 field-cultivation brigades of the collective farms were merged with the tractor brigades of the MTS forming tractor-field-cultivation brigades. In the regions of the non-black-earth zone and in the Baltic republics the practice of temporary transfer of tractor brigades of the MTS to the management of the collective farm board has been widely used. In the north Caucasus complex tractor-field-cultivation brigades were created while the management of the collective farms and the MTS was entrusted to one and the same person.

These experiments brought positive results. Machines were utilized better, the quality of work improved, the time needed to carry out the work was cut down, expenditures of the state and collective farms for the maintenance of the management apparatus were reduced, and the cost of kolkhoz products and tractor work was cut down. For example, both Kazminsky collective farm and Kazminsky MTS, Stavropol region, in 1957 were under the management of the kolkhoz chairman, Hero of Socialist Labor G. Z. Zhilyaev. During that year the collective farm increased production and deliveries to the state as follows: meat—31%, milk—38%, wool—8%, eggs—73%. The cost per centner of payments in kind was reduced by six rubles in the case of grain, 224 rubles for meat, 44 rubles for milk and 174 rubles for wool. Seasonal work per tractor in 1957 increased by 7%, daily work per combine by 18%, per harvester by 23%. In Rossiya collective farm, served by Grigoriopolis MTS, Stavropol region, in 1957, after placing the collective farm and the MTS under the same manager, the work of a tractor increased per shift on an average of 20%, combines—more than twice; and grain crops were harvested in five days instead of fifteen days in 1956. Expenditures of the MTS per centner payment in kind were reduced for grain from 25.6 rubles to 17.8 rubles, for sunflowers—from 51.5 rubles to 43.6 rubles. The total income of the MTS increased by 644,000 rubles and expenditures on management personnel were reduced from 3.5 rubles per ha. to 2.1 rubles. The tractor brigade of Koknev MTS worked on Lidums collective farm, Plyavin district, Latvian SSR, in 1956. It had four tractors. In 1957 the collective farm completed all work with only two tractors which were transferred under its operational management. It carried out on time all summer and autumn field work, fulfilled the plan of autumnal plowing by 100% (which had never happened before) and obtained a sharp increase in yields. On Lieluppa collective farm, Baussk district, Latvian SSR, the work in 1956 was carried out by three tractors of an MTS. In 1957 this collective farm asked for a transfer into its operative management of only two tractors. Using them in 1957 it carried out on time all field work, obtained high yields of grain crops, sugar beets, and potatoes, and increased the production of milk and meat.

Thus it is evident that the existing form of production-technical servicing of the collective farms by the MTS no longer satisfies the need to increase kolkhoz production and has become a brake on the development of the productive forces in agriculture. It is necessary to find a new form of production-technical servicing of the collective farms which better corresponds to the present stage of development of the kolkhoz regime. The CC of the CPSU, after a deep study of the question of the further development of the kolkhoz regime and of the existing relationships between the MTS and the collective farms, came to the conclusion that it

was necessary and expedient to change to a system of selling tractors and other agricultural machines directly to the collective farms.

As a result of successes achieved in the development and strengthening of the kolkhoz regime and the great upsurge of the kolkhoz economy all the conditions for the transfer of machines to the collective farms and the reorganization of the MTS along new principles were established.

Through the constant help of the Soviet state the economic and organizational structure of the collective farms has undergone tremendous changes. First of all the scale of their operations has expanded: collective farms have become large farms possessing many branches. In 1949 there were 251,700 collective farms with an average of 557 ha. of plowed land per farm; now there are about 78,000 with an average plowed land area per farm of 1,954 ha. Many collective farms have from five to ten thousand ha. of sown area or even more.

During the first stage of collective farm formation the collective production of the kolkhozs was based on a simple pooling of peasant implements accompanied with organizational-technical assistance of the MTS. The indivisible funds of all collective farms, for example, in 1932, were valued at 4.7 billion rubles, including 1.6 billion rubles in membership shares. Now the indivisible funds of collective farms have reached almost 100 billion rubles and the part of the membership shares in this amount is only three per cent. Collective farms own capital structures and buildings, electrostations, machine shops, complex machinery and equipment, which are characteristic of large-scale mechanized farming. But it is not only the tremendous growth of kolkhoz property that matters, but also its qualitative changes. At the beginning of 1957 the total value of tractors, cars, agricultural machines, equipment, and means for power production in the hands of the collective farms reached 24 billion rubles. The collective farms own 162,000 mechanical prime movers; more than half of the collective farms receive electric service. The capacity of motors owned by the collective farms is three million kw. Out of the total of 600,000 trucks in agriculture about 330,000 are the property of the collective farms. Many sizeable collective farms own a large number of machines. For example, in Budennyi collective farm, Odessa region, at the beginning of 1957 owned 17 cars, four tractors, an electrostation with a capacity of 317 kw., 112 electromotors, 13 oil and other prime movers as well as a large number of capital buildings. In this kolkhoz alone 50 tractor drivers and 100 chauffeurs were occupied.

In the means of production, machines and production buildings owned by collective farms not only is the labor of kolkhoz members invested, but also the labor of workers and scientists. Consequently the kolkhoz wealth was created with the active participation of the workers of industry, of the whole Soviet people. Agricultural production is no longer a result of the work of peasants alone. It more and more embodies the labor of socialist industry, producing machines, mineral fertilizers, power, raw materials, fuel, etc. On the basis of the increased part in agricultural products of the past labor of industrial workers, embodied in modern tools of production, the productivity of labor in agriculture has increased. The expenditure of labor and means per unit of product has been reduced, the costs of products have been cut down. Considerable changes took place in the economic relations between the collective farms and industry. Through the MTS the collective farms obtain machines mainly for husbandry. As to the mechanization of livestock breeding, transportation and other work, as well as of construction on collective farms, the means of production and materials necessary for this purpose are acquired by the collective farms directly from industry. Thus the collective farms armed with modern technical means have many-sided direct connections with industry from which they obtain machines, equipment, spare parts, building materials, power, fuel, etc.

The Soviet state through its budget directs enormous means into agriculture. For example, in the last four years in the construction of production buildings and structures, payments for tractors, machines, and equipment the Soviet state invested 75.4 billion rubles, or ten billion rubles more (in comparable prices) than during the Second, Third, Fourth and the first three years of the Fifth Five-Year Plans taken together. On the other hand the collective farms invest their means into undertakings of national importance. For example, in connection with the considerable rise of kolkhoz incomes, a larger and larger part of the kolkhoz means is spent on the construction of clubs, hospitals, lying-in homes, creches, and other cultural-servicing institutions. Many collective farms at their own expense build roads and invest large sums into the construction of irrigation canals and water reservoirs as well as in opening new lands. For example, for this purpose in the Central Fergana and the Surkhan-Darya region in 1957 collective farms spent 200 million rubles from their indivisible funds and plan to spend about 100 million rubles in 1958. Thus though kolkhoz property remains cooperative property in form, in fact it approaches more and more the character of national property.

This means that the strengthening and broadening of kolkhoz property is not in contradiction with the growth of national property. Both the collective farmers and the Soviet state are interested in the growth of the kolkhoz property. The further comprehensive strengthening and development of cooperative property will bring it even more to the level of national property.

The technical rearming of agriculture has radically changed the character of agricultural labor. In the villages there appeared new specialties, numerous cadres of highly trained mechanizers, electricians, chauffeurs, builders. On the state farms and MTS a numerous working class grew up. From the membership of the collective farms came numerous cadres of trained workers such as tractor drivers, combine operators, engine drivers, lathe operators, electricians, assembly workers, brigadiers, branch-farm managers, chauffeurs and workers of other specialties. For example, at the beginning of 1957 321,000 chauffeurs, 650,000 brigadiers and branch-farm managers were working on the collective farms. 588,000 collective farm members were occupied permanently in auxiliary enterprises and shops, and more than 700,000 kolkhoz members were employed in kolkhoz construction brigades. With the growth of the technical equipment of all branches of agricultural production each member of the collective farm will master more and more complicated machines applied in plant production, livestock breeding and in auxiliary enterprises. In modern conditions the differences between a member working with machines and an ordinary member, which existed before, is disappearing. The cultural-technical level of the village laborers has been raised and their conscientious attitude toward their work and collective economy has been strengthened.

In the last years the situation in respect to the managing personnel and specialists on the collective farm has radically changed. In 1953 there were only 18,500 specialists on the collective farms; there are now more than 150,000 specialists with college and specialized high-school education. Thousands of specialists, Party, and Soviet workers were sent from the cities to the villages for

guidance work. The Party organizations in the villages were considerably strengthened. At the beginning of 1957, among the kolkhoz chairmen, more than 90% were members and candidates of the Party. Great experience in managing the collective economy was accumulated on the collective farms and the discipline and carrying out of state obligations was improved.

In connection with the growth of the kolkhoz economy their incomes have sharply increased. In 1956 alone 16.7 billion rubles were transferred from the monetary incomes of the collective farms to indivisible funds, while their total incomes amounted to 94.6 billion rubles, or three times as much as in 1950. At present the collective farms have all the possibilities for acquiring the MTS means of production. Many of them can buy all the necessary machines in one year. For example, in 1956 the monetary income of the Stalin collective farm, Fergana region, Uzbek SSR, was 21.9 million rubles and it transferred 4.3 million rubles to the indivisible fund. Monetary incomes of the Shark Yulduzi collective farm, Tashkent region, Uzbek SSR, amounted to 19.5 million rubles in 1956; of the Rassvet collective farm, Mogilev region, White Russian SSSR, to 15.2 million rubles. Many collective farms obtained even larger incomes.

In 1957 the average income of the kolkhozs in the Stavropol region amounted to 8.5 million rubles, while in a number of collective farms incomes ranged from 20 to 30 million rubles. The value of the basic means of production, for example, in Pyatigorskaya MTS, was 11.9 million rubles, while incomes of two collective farms served by this MTS amounted to 50 million rubles. In the Stavropol region the value of the MTS basic means of production to be acquired by the collective farms amounts to 505 million rubles. The total monetary income of the collective farms of the region in 1957 amounted to almost 1.5 billion rubles of which 300 million rubles were transferred to indivisible funds.

In the Sverdlov region the value of the MTS tractors and agricultural machines amounted to 286.5 million rubles. Considering their wear and tear it is planned to sell these machines for 130 to 140 million rubles, while the monetary incomes of the collective farms in 1957 amounted to about 500 million rubles.

In the Byelorussian SSR the total value of MTS machines (including expected additions in 1958) is about 1,150 million rubles, or, on the average, 280,000 rubles per collective farm. But the collective farms of that republic intend to transfer 862 million rubles to indivisible funds in 1958.

Of course, the economic situation of the collective farms is not the same in all cases. Some collective farms can buy machines needed by them and pay for them during this year, while others can do it in 1959 and some—only in two or three years. In view of this the question of the transfer of machines and the reorganization of the MTS must be solved in each region concretely, depending upon local conditions. For example, in the Stavropol region already in the current year the collective farms will buy machines of 41 MTS, each of which serves only one collective farm; the other collective farms will buy them in 1958-1960. Out of 26 collective farms of the Belaya Tserkov district, Kiev region, six will be able to buy machines during 1958 and 15 collective farms in 1959. Now extensive work is being carried out in the districts to determine which collective farms can buy machines in the near future and which would need two or three more years for this purpose. For the collective farms which cannot buy the needed machines, and in order to organize their proper utilization this year, presumably it will be necessary to preserve the system of serving them through the MTS for some time.

Thus it is necessary to carry out the transfer of the MTS machines to the collective farms gradually, taking into consideration the natural and economic circumstances of various districts and collective farms. It is advisable to sell to the collective farms tractors, soil cultivating, sowing and harvesting machines (including combines), and machines for the mechanization of work in livestock breeding, truck gardening, fruit orchards and other branches of agriculture. The concentration of tractors and other machines on the collective farms will cement the ties of kolkhoz production with industry and the national economy as a whole and will make it possible to utilize machines more efficiently in agriculture. At the same time unproductive expenses will be reduced because of the reduction of the management apparatus and the reduction of administrative-economic expenses.

The sale of MTS machines to the collective farms involves the necessity of a serious approach to the question of the appraisal of machines. Presumably it will be necessary in each district to form an appraisal committee which can determine the value of machines to be transferred, taking into consideration their technical state, the degree of physical wear and tear, and their obsolescence. In the appraisal of the value of machines and equipment sold to the collective farms the prices should not be too high or too low. It is clear that the collective farms will buy first of all those tractors and other machines with which the MTS serve them now. It is important that in this sale of machines neither the state, nor the collective farms suffer. The value of the new machines to be sold to the collective farms should be established at a level where they cover the expenses of production of industry and make it possible to form necessary accumulations for the further development of agricultural machine building.

However, it would be inadvisable to sell a number of machines which at present cannot be properly utilized by collective farms. Here, first of all, may be mentioned machines necessary for road building and meliorative work, machines for mining peat and limestone, for construction of ponds and water reservoirs, for improvement of meadows and pastures, for planting work in orchards and vineyards, etc. Presumably it would also be inadvisable to sell grain combines to those collective farms which have small areas under grains. It is better to leave such machines at the RTS, organized on the basis of the MTS, and lease them, as needed, to the collective farms for a certain fee.

The final conditions and procedures for transferring MTS machines to the collective farms will be worked out at the next regular session of the Supreme Soviet of the USSR after discussion of Comrade N. S. Khrushchev's theses concerning the question of further development of the kolkhoz regime and reorganization of the MTS. A study of the suggestions by the people working in agriculture may help to find the best solution of the question. However even now it is possible to sell MTS tractors and other agricultural machines to those collective farms which have expressed a desire to buy them. As a rule, collective farms receive MTS machines assigned to the tractor brigades serving that particular collective farm. Transfer is made by a formal act signed by the director and chief engineer of the MTS, the chairman of the collective farm, the brigadier of the tractor brigade as well as by a representative of the Agricultural Bank. Payment for the transferred machines will be made only after the establishment of prices and procedures for the transfer of machines.

After the transfer of the machines to the collective farms the RTS will carry out the repair of complex machines of the collective farms, supply them with new machines, spare parts, fuel, fertilizers, and other materials, organize the

lease of those machines which the collective farms do not have and service the kolkoz machine-tractor fleet. It is necessary to strengthen substantially the RTS repair facilities and to leave them a sufficient number of specialists and workers who can ensure the fulfillment of the task given to the RTS.

Presumably it would be advisable to have one RTS in each district only, the most important task of which, beside carrying out repairs, will be to supply collective farms with new machines and all necessary materials. As is known, there are now serious defects in supplying collective farms with means of production. The supply of collective farms is in the hands of several supply organizations belonging to various government departments: the Ministry of Agriculture, the chief autotractor marketing organization, the chief petroleum products marketing organization, etc., as well as consumer cooperatives. Frequently the warehouses of these organizations are found in different localities and this compels the workers of collective farms to undertake expensive trips in search of necessary machines and materials. Especially unsatisfactory is the supply of collective farms with fuel, metals, and building materials by consumer cooperatives and with spare parts for automobiles and tractors by the organizations of the chief autotractor marketing administration. There are differences in prices at which materials and technical means are sold to the collective farms, MTS, and state farms. With the transfer of supply functions to the RTS in respect to the collective farms these defects will be removed.

The functions of organizations in charge of supplies to agriculture will be considerably changed. Formerly they were in fact occupied with the distribution of machines mainly among the MTS and state farms. In the future they will have to sell them to a large number of buyers—to the collective farms. This will demand the organization of a smooth flow of industrial goods needed by the collective farms in an assortment of sufficient variety.

The transfer to the RTS of the function of selling material-technical means to the collective farms will be of great economic importance. Collective farms will buy only those machines which they need. They will not buy poor machines or imperfectly designed machines and this will mean an end to the element of bureaucratic distribution of machines which results in heavy losses to the state. As is known, the MTS are fully financed through the state budget and because of that may accept any machines that are sent to them, even if they do not need them. As a result some of the machines are not utilized in the MTS.

The new method of supplying machines to agriculture should exercise great influence on the work of enterprises producing agricultural machines. They will become interested in the production of improved, economically justified machines. Thus the new method of machine marketing will also strengthen self-support in industry, will require improvement in the quality of machines, and the production of machines of latest designs. The agricultural machine building industry, the economic councils, and each enterprise individually now have a great responsibility for perfecting machines.

The workers of agricultural machine building enterprises should carefully study the needs of agriculture for machines and on this basis reorganize their work in such a way that the demand of collective farms in all necessary machines is satisfied. At present there are cases when machines go into mass production incompletely designed, which are not suitable for use. As a result, the state suffers great losses. This will become impossible under the new conditions, because collective farms will not buy machines which are not suitable for their conditions. It is necessary to send into mass production only those machines which have shown good results under real conditions of production in corresponding agricultural zones. Only after carrying out trial runs of tractors and machines under real conditions of work will it be possible to recommend these machines for sale to the collective and state farms.

At the regional, republic, as well as all-Union agricultural expositions it is planned to organize more widely demonstrations of all new agricultural machines, demonstrations of their work with the purpose of making collective farms widely acquainted with models of new machines. At the same time it will be possible to organize the sale of new machines at the expositions or take orders for the delivery of new machines directly to the collective farms.

The RTS must help collective farms to select machines wisely and to take care that the machines are quickly mastered. At some RTS it will be necessary to have an assortment of new types and trademarks of machines in order to show them in action, to organize publicity for new machines, excursions to experimental fields and farms using new machines, to publish catalogs, bulletins, handbooks, placards, and leaflets about new machines soon to be used in agriculture. And it is necessary to be careful that the collective farms buy machines only if they wish to do so.

The highly productive use of the machine-tractor fleet to a considerable degree depends upon the quality of repairs and the proper organization of technical servicing of agricultural machines during the period they are used. In the majority of the MTS and state farms there are repair shops which insure the repair of tractors, cars and agricultural machinery. The MTS have mobile repair shops and field brigade shops to carry out the technical servicing of tractors and current repairs of the simplest agricultural machines. At the same time the majority of collective farms have no repair base of their own and because of that from the very first day after the purchase of tractors and agricultural machines they will experience difficulties in carrying out technical servicing and repair of their machine-tractor fleet. The RTS must render help to the collective farms in that respect. They must ensure good quality capital and current repairs of tractors, cars, and technical servicing of machines; they must instruct collective farms in technical servicing and render help in removing imperfections. We may assume that the engineering-technical personnel of the RTS must also carry out state control over the technical state of tractors and other agricultural machines in the collective and state farms.

At present all maintenance expenses of the MTS and their mechanized agricultural work for collective farms are covered by appropriations from the national budget, while the agricultural products in kind delivered by collective farms for the work done by the MTS and the money payments of the collective farms for the tractor and other mechanized work become a revenue of the state. Such a procedure was established because collective farms were at first not sufficiently strong and could not fully compensate the state for its expenditures. Financing the MTS from the state budget was one of the forms of state assistance to the collective farms. However, at present the collective farms have become so strong that they can take over the expenses of purchasing and using machines. The reorganization of the MTS into RTS makes it possible to take them off the state budget and make them pay their way. In this case all repair work, technical servicing, leasing of machines, etc., done by the RTS will be paid by the collective farms at prices which will ensure that the RTS function without losses and obtain necessary accumulations.

In connection with the reorganization of the MTS the question arises: What should be done with agronomic, zootechnical, procurement, and other functions now carried out by the MTS? Presumably it will become necessary to have some agronomic group in each district which would carry out the guidance of agronomic, zootechnical, land surveying and other activities common to the whole district. We speak here of such measures as control of agricultural pests, diseases of agricultural plants, surveying of plots, veterinary service, the spread of the achievements of the best farms to all farms, etc.

It is necessary to note that in connection with the reorganization of the MTS the local Party and Soviet organs will have new responsible tasks. Their attention should now be concentrated directly on the guidance of collective farms which have their own tractors and agricultural machines. Local organs must render constant practical help to the collective farms in organizing their work in a new way. At the same time they must pay even more attention and render more concrete help to the lagging collective farms, to ensure their organizational-technical strengthening and bringing them up to the level of the best ones. Much work also will be needed in organizing smooth operations in the RTS. All this indicates the necessity of improving the methods of guidance of agricultural production.

After the reorganization of the MTS a large part of their technical staff will be transferred to the collective farms. This means that much work should be carried out to keep experienced personnel in agriculture and to create favorable working conditions. We must think seriously about problems of payment for their labor in each collective farm so as to ensure a highly productive use of machines.

In connection with the transfer of the MTS machines to the collective farms and the application of the principle of self-support to the RTS, the organization of the finances of the collective farms will greatly change and they will need their own working capital. This capital they will need for the formation of certain reserves of petroleum products, of spare parts, and other materials purchased from outside as well as for carrying out mechanized agricultural work for the harvest of the next year. We should also study the question of opening credits to the collective farms for the creation of their own working capital, since some collective farms will need credit during the first two-three years of work under new conditions.

The greatest significance of the measures carried out for the further development of the kolkhoz regime and the reorganization of the MTS consists in the fact that their realization will contribute to the expansion of commodity-money relations and the broadening of the sphere of action of the law of value in agriculture as well as to the cementing of economic ties of agriculture with industry. Carrying out these measures will make possible better, economically more justified ways to solve questions of the equivalent exchange of goods between industry and agriculture on the basis of the value of products. This will make it possible establish prices on agricultural machines on the basis of their cost of production and will make possible the creation of the necessary accumulations in industry for further development and improvement. On the other hand in determining the prices of agricultural products it is necessary to fix them at a level where the average expenses of the collective farms in the production of foodstuffs and raw materials—if their work is properly done—is paid and the collective farms are ensured of a certain rate of accumulation.

The transition from the production-technical servicing of the collective farms by the MTS to the free sale of agricultural machines to the collective farms will be of tremendous importance for the development of the kolkhoz regime. It will contribute to the further expansion of the economic ties of the collective farms and socialist industry, to the cementing of the alliance of the working class with the kolkhoz peasantry.

In its decisions the February pelnum of the CC, CPSU, initiated a national discussion of Comrade N. S. Khrushchev's theses so that, on the basis of a careful study and generalization of all concrete suggestions of the working people, it would be possible to find the best and most desirable organizational forms of reconstruction for kolkhoz material-technical servicing in the interest of the further development of the kolkhoz regime and the creation of an abundance of agricultural products. The national discussion of the pressing needs of economic and state construction is an expression of the really democratic character of Soviet society and is the most important principle in the life of our country.

N. Karotamm:

A Necessary and Timely Step

In the theses of Comrade N. S. Khrushchev's report "Concerning further development of the kolkhoz regime and reorganization of the MTS," approved by the February plenum of the CC, CPSU, a deep scientific analysis of the development of Soviet agriculture and the historical significance of its results was made. The tremendous part which the MTS played in the formation and strengthening of socialist production relations in the villages was shown and the special features of the present stage of kolkhoz development and the necessity of MTS reorganization was indicated.

Important economic and organizational measures carried out by the Party in recent years ensured a sharp rise in agricultural production. The majority of the country's collective farms became large and economically strong enterprises, their technical equipment was greatly increased; numerous cadres of trained specialists—plant specialists, livestock specialists, mechanics—grew up; the income of the collective farms greatly increased and the material welfare of the kolkhoz members greatly improved.

During the years of their existence the collective farms have accumulated a rich stock of experience in the organization of production. The overwhelming majority of collective farms is now able to use properly modern agricultural techniques and the achievements of agricultural science. Outstanding successes of the kolkhoz regime, rapid tempos of growth of kolkhoz wealth and the prosperity of kolkhoz members resulted in the fact that the former political role of the MTS in the villages lost its importance. As was stated in Comrade N. S. Khrushchev's theses, "There is now no one left to whom the workers of the MTS have to demonstrate the advantages of the large-scale collective economy, because the kolkhoz regime won in our country long ago and members of a kolkhoz do not imagine living outside of the collective farm."

On the other hand in recent years negative aspects of the existing practice of production-technical servicing of the collective farms by the MTS have become more and more apparent. First of all we have in view here the fact that the existence of two masters on the same land—a collective farm and an MTS—is an obstacle to the most effective utilization of the labor force, land resources and machines.

Thus life, the objective processes of development of socialist agricultural production, set an important task: to

find a new form of production-technical servicing of the collective farms which would better correspond to the present stage of the kolkhoz regime's development.

The CP, faithful to the Leninist principle of studying carefully and supporting the beginnings of anything new born through the experience and initiative of the masses, in recent years paid great attention to attempts to find new forms of relationships between the MTS and collective farms made in a number of our country's regions. Study and generalization of this experience made it possible to work out the most effective solution of the urgent needs of development of agricultural production: selling tractors, combines, and other agricultural machines directly to the collective farms.

Measures for further development of the kolkhoz regime, worked out by the CC of the Party, are of tremendous importance for communist construction. The decision of the February plenum of the CC, CPSU, opens a new vista for the further development of collective farms, the growth of their economy, and expansion of agricultural production, thus increasing the social wealth of the whole country. This decision is a model of creative development and application of the revolutionary Marxist-Leninist theory. Of great theoretical importance is the question of the way by which the cooperative-kolkhoz property can be raised to the level of the all-national property.

Reorganization of the MTS, sale of machines to the collective farms will strengthen collective farms, will strengthen kolkhoz property. This will greatly help to solve the task set by the Party: the further growth of the agricultural productive forces. The kolkhoz regime has far from exhausted the tremendous possibilities of its development and increase of its production. This may be seen from the example of the best collective farms. On the way to communism the kolkhoz regime should develop further and fuller. In view of this the interests of communist construction demand an all-around strengthening of the agricultural artel.

Some economists treated the question of two forms of socialist property in a dogmatic way. Having lost contact with life they failed to see the essential qualitative changes of kolkhoz property which, in part, are connected with the growth of the indivisible funds of the collective farms. Views that the only method of raising cooperative-kolkhoz property to the level of all-national property is by transforming collective farms into state farms, such views received a certain credence. They were based on opposing these two forms of socialist property to each other, in a failure to understand their mutual connection and tendencies of development in the process of communist construction.

Of course, all-national property is the highest form of socialist property. The level of collectivization here is higher than that of kolkhoz property. However to oppose these two forms would be basically wrong. The main thing is that both these forms are socialist, that both of them serve the interests of the people, serve the construction of a communist society. While studying these forms of property in their mutual connection, in their indissoluble unity, observing them under concrete circumstances, we must consider dialectically the tendencies and perspectives of their development. The practice of communist construction shows the necessity of further strengthening the all-national as well as the collective farm property.

Starting with a dogmatic opposition of the two forms of property some economists were apprehensive that the sale of machines to the collective farms would cause a weakening of the all-national property and the state guidance of agriculture. Hence they were coming to the conclusion that the problem of improving relations between the MTS and collective farms should be solved without transferring machine property to the collective farms. They were suggesting either leasing out machines to the collective farms or organization of temporary tractor-field brigades. However such measures—though they could remove some difficulties in relations between the collective farms and the MTS—do not solve the question how to concentrate in the same hands the labor power of the collective farms and the agricultural machines.

The decision of the February plenum of the CC, CPSU, and Comrade N. S. Khrushchev's theses represent an example of the deep Marxist-Leninist analysis of the objective process in the development of two forms of socialist property. They reveal the dialectical relationship of kolkhoz and all-national property, and trace the tendencies of their development in the process of communist construction. The sale of the MTS' machines to the collective farms not only would not weaken all-national property, but, on the contrary, will help to bring kolkhoz-cooperative property closer to the level of all-national property, their merging into one and the same property of communist society.

***

Realization of the measures outlined in the theses of Comrade N. S. Khrushchev's report demands the solution of a number of economic and organizational problems and first of all of the question concerning the procedure and conditions of machine sale to the collective farms.

The majority of our collective farms have the necessary means for the purchase of agricultural machines needed by them, as may be seen from the following figures. The income of all collective farms from state deliveries and sale of products to the state amounted in 1956 to 81.3 billion rubles (in 1955 it amounted to 60.7 billion rubles) and, with the inclusion of receipts from the sale of products at kolkhoz markets, to 94.6 billion rubles.

Money contributions of the collective farms to the indivisible funds amounted in 1956 to 16.7 billion rubles, while in 1958, according to preliminary calculations, they would rise to about 25 billion rubles. The balance value of the basic production means of all MTS in the country on January 1, 1957, was 53.5 billion rubles, of which tractors made up 13.5 billion rubles, combines 8.9 billion rubles, other agricultural machinery, implements and inventory — 15 billion rubles. The balance value of that part of the machine-technical means which collective farms can buy from the MTS was 40.6 billion rubles. This is only 40% of the money income which collective farms obtained in one year—1956. We have, however, to keep in mind that the basic production means of the MTS in their balances are valued at their original cost. Actual expenditures of the collective farms for acquiring the necessary MTS' machines (considering their wear and tear) may be approximately estimated at 18 to 20 billion rubles. A comparison of this figure with the above-mentioned figure of 40.6 billion rubles shows that the MTS have many obsolete and worn-out machines.

The figures given above show that collective farm contributions to indivisible funds in 1958 alone would be fully sufficient for the purchase of the MTS' machines. As the sums contributed to the indivisible funds are also needed for construction by collective farms of buildings and structures, purchase of cattle, etc., we may conclude that on the whole the collective farms of the USSR will be able to buy the needed machines from the MTS for cash in the next two, or at most, three years.

These data covering all collective farms show that the purchase of machines by collective farms on the whole is

quite an easy task. However, a certain number of economically weak collective farms probably will not be able to purchase the machines they need in such a short time (from two to three years). These collective farms would need state credit for a longer period, the exact length depending upon the state of their economy. In connection with this the task arises of studying carefully the economic situation of each collective farm and establishing different periods for the purchase of the MTS' machines. The length of such periods must be advantageous to both the collective farms and the state. It is desirable that these periods be not too long. We believe that a four-year period is quite sufficient for every economically weak collective farm to pay the state fully for the MTS' machines and implements which it will acquire. The overwhelming majority of the country's collective farms will be able without any difficulty to pay the state in cash for the purchased machines during two, or a maximum of three years.

Some comrades consider it expedient to merge weak and relatively small collective farms so that they may be able to buy new machines quicker. It is possible that in some cases such a measure would be justified, especially in the case of a merger of an economically weak collective farm with a stronger one. However we think that the question of further merger of collective farms should not necessarily be connected with the question of the purchase of machines: the merger of several economically weak collective farms would not make easier their purchase of machines; they would need as many or almost as many machines as they had before their merger. Essentially the sum of monetary means which they can spend on the purchase of machines also will remain the same. On the other hand, managing the economy of too large a territory of the merged collective farms may involve certain difficulties and this fact should be carefully considered.

The reorganization of the MTS will bring considerable changes into the forms and organization of economic ties between the state and the collective farms. Payments in kind, as a form of obtaining agricultural products by the state from the collective farms, will be replaced with a different form. It will be also necessary to change considerably the forms of the state procurement and purchasing system. We think that it would be advisable to introduce a system of purchase of kolkhoz products through a contract between a collective farm and the state, that is, to develop contract trade. Sales of agricultural machines to collective farms should also be placed on the basis of contractual relations. This will make it possible to determine ahead of time the needs of the collective farms for various types of machines and other industrial products, will help to organize properly supplying the collective farms and improve the planning of industrial production.

Instead of several existing state prices for kolkhoz products one state wholesale price should be established for the same product. This price should be different for each republic and region (and in individual cases, possibly, also for administrative districts), so that differences in economic and natural conditions of production are taken into consideration. For better reflection of local conditions it would be advisable to increase the number of zones as compared with the number of zones now established for the purposes of differentiating purchase prices.

An average zonal state wholesale price for kolkhoz products may be determined by one of two methods: either on the basis of an average cost of these products or on the basis of the cost of production in a zone with the worst production conditions.

Prices based on the average cost, in our opinion, make unprofitable those agricultural enterprises which work under less favorable than average conditions of production in a given zone. This is their basic defect. Such prices are one of the main reasons why a certain portion of the collective farms and state farms is lagging behind.

We believe that it would be more advisable to establish prices based on less favorable conditions in a given zone. At the same time the larger part of the differential land rent of the collective farms which work under more favorable conditions should go to the state budget through a money tax.

In fixing economically justifiable prices we must consider the necessity of developing and deepening specialization in agricultural production by zones and regions of the country. Especially favorable conditions for a broad specialization of agriculture will be created when, because of the growth of the production volume, the state will be able to buy necessary agricultural products in those regions where they are cheaper. Formation of prices should be such as to stimulate to the greatest possible degree the process of specialization, which would make it possible to carry on highly mechanized production, to increase the productivity of labor and to lower the cost of products.

Technical means and other production goods, produced by state enterprises, should be sold to the collective farms at prices based on the social value of these goods, ensuring accumulation in industry. As a basis of state wholesale prices of agricultural machines the cost of products should serve, plus a profit necessary for ensuring a normal process of expanded reproduction in the branches producing agricultural machines.

The purchase of tractors, combines, etc. by the collective farms will be completely voluntary. This will present new problems to the tractor builders and producers of agricultural machines. The production program of these branches will be determined mainly by the volume and structure of kolkhoz demand for various kinds and types of agricultural machines. This will create favorable conditions for designing and manufacturing improved, economically advantageous machines which in full measure answer the needs of kolkhoz production in various zones of the country. An important problem then will be the careful and timely study of kolkhoz demand for agricultural machines and the making of necessary corrections in the production program of various branches of agricultural machine building. We should not permit the development of a situation in which the plants spend means on the production of machines for which there is no demand.

The suggestion concerning the reorganization of the existing MTS into RTS is certainly right. We think that it would not be advisable in all cases to transform an MTS into an RTS. Such questions should be solved according to circumstances in each district. In some administrative districts one RTS for all the collective farms in the district will be sufficient. In larger districts the establishment of RTS branches may be advisable.

An RTS should become not only a repair base for the collective farms. Some types of special machines the use of which is not profitable in individual collective farms should be concentrated here (for example, machines needed for meliorative work etc.). Collective farms will buy fuel, lubricants, spare parts, fertilizers, etc. in the RTS. The prices of fuel and lubricants, sold to the collective farms, should be established along the same principle as the prices of agricultural machines.

Payment for the work of the RTS done for collective farms should be made, in our opinion, in money and not in kind. It is necessary that charges for the repair of the

kolkhoz machines be advantageous both to the collective farms and to the RTS. If these charges are unjustifiably high, unattractive to the collective farms, they will start organizing their own repair bases and this will considerably increase the cost of repairs.

Especially important is the smooth and timely supply of the collective farms with spare parts for tractors and other agricultural machines, as well as with fuel and lubricants. Our industry should develop the production of such articles and materials on a scale sufficient for the satisfaction of the needs of the collective farms. It is necessary also to improve sharply the quality of spare parts for tractors, agricultural machines, and implements.

Various interkolkhoz production enterprises must take on great importance, in our opinion. According to the principle of cooperation and mutual help collective farms may establish transport columns (offices), mine peat, carry out meliorative work, build interkolkhoz electrostations, plants producing building materials, enterprises processing agricultural raw materials, etc. It would be possibly a good thing to form interkolkhoz combinates in administrative districts for the work enumerated above and for other work which could be carried out with greater economic advantage through the common efforts of many or several collective farms.

It is very important that machine operators now employed by the MTS continue to work in agriculture. When they are employed by collective farms, conditions of their work should be such that they will be materially attracted to work there. Collective farms should satisfy their needs in that respect. At the same time even now it is necessary with the help of the MTS to develop in the collective farms the training of tractor drivers and other specialists.

The realization of the measures outlined in the theses of Comrade N. S. Khrushchev's report opens before the collective farms even broader prospects for the application of self-support. Prices, costs of products, profits and other economic levers now acquire first rate importance for the collective farms. Just as in the MTS it would be advisable for the collective farms in the near future to carry out a reappraisal of the means of production (according to the cost of reproduction). This would help to determine better the cost of kolkhoz products.

Conditions for a comprehensive development of the kolkhoz democracy will become even more favorable for increasing business and political activity of kolkhoz members. Probably it would be advisable to form in the administrative districts a kolkhoz Soviet which would represent the kolkhoz society. Life will show later how to define properly the rights and duties of such Soviets. Among other things they should be in charge of interkolkhoz enterprises, common economic measures, etc.

It is necessary to strengthen the guidance of the economically weak collective farms now lagging behind others. It will become possible to send to such collective farms experienced workers—former directors and specialists of the MTS—who are well versed in the technical and economic sides of kolkhoz production. In the necessary cases the personnel of the kolkhoz brigades should also be strengthened with experienced specialists. Such a utilization of the workers of the MTS who showed themselves favorably in practical work undoubtedly will be one of the important levers for improving the economy of the lagging collective farms.

The expected reorganization of the MTS and the sale of machines to the collective farms are of tremendous importance for further development of the productive forces of socialist agriculture. In the future there will be only one master, one boss on the kolkhoz land—the collective farm. The kolkhoz labor and kolkhoz machines will be united. This will result in better utilization of labor and machines, which means that carrying out the same volume of work as before the reorganization will necessitate fewer tractors, agricultural machines, and inventory.

Machines will be used only in operations which are really needed for raising kolkhoz crops. The organization of labor in agriculture will improve, its productivity will increase, the cost of kolkhoz products will be reduced. The change in the forms of production-technical servicing of the collective farms will help to free considerable labor resources now occupied in agriculture for their use in industry and construction.

The initiative and labor activity of the kolkhoz members will increase, their material interest in strengthening the collective economy of the collective farm will be intensified. Development of collective farms into large economic units with many branches of activity, using modern machines, will raise kolkhoz production to a new level and will ensure the further growth of the welfare of the kolkhoz peasantry and of the whole Soviet people.

The sale of tractors and other agricultural machines to the collective farms and reorganization of the MTS will strengthen the economic ties of industry and agriculture, will cement further the alliance of the working class with the kolkhoz peasantry.

It is possible that in connection with the realization of all these measures certain difficulties will be met in practice. For example, in some cases there may appear sectionalism, attempts to subordinate all-national interests to the interests of a collective farm. But, without doubt, such cases will be exceptional. Increased consciousness of the kolkhoz masses, their vital concern with the development of the whole socialist economy is a firm guarantee against the possible infringement of state discipline.

In conclusion we would like to emphasize the great tasks lying ahead for the Soviet economists. It must be said that some economists still remain prisoners of dogmatism. Instead of looking forward, they look backward, to the past. The economists must raise new scientific and economic questions of vital importance with greater daring and determination. For this, they have to study more deeply the economic life of the country, kolkhoz practice, and look forward, to the future. That was V. I. Lenin's advice.

E. Skripitsyna:

A Sure Way Toward Improving the Utilization of Agricultural Machines

The MTS played an important historical part in the formation and strengthening of the kolkhoz regime. They ensured material-technical conditions for a highly productive utilization of the fleet of new agricultural machines and were carriers of technical progress. Pursuing a program of a sharp upsurge in agriculture, the CP in recent years carried out a number of serious measures aimed at the further strengthening of the MTS and increasing their role in the development of collective farms. The tractor fleet of the MTS was increased, as compared with its prewar number, almost twice and the volume of work carried out by the MTS increased 2.8 times.

Parallel with the growth of the machine-tractor fleet was raising the level of mechanization of agricultural operations

increasing the volume and expanding the sphere of tractor work carried out by the MTS for the collective farms. If in 1940 the MTS carried out 90 kinds of agricultural operations, now they carry out more than 200. Field operations are almost fully mechanized in the production of grain, sunflowers, sugar beets, and other crops, and this made it possible to bring into cultivation enormous masses of new lands as well as to raise considerably the technique and yields of kolkhoz agriculture. By comparison with the pre-war period, the utilization of the MTS tractor fleet has greatly improved. For example, the average annual work of a tractor done in the MTS of the Russian Federation in 1940 (in terms of 15-hp.tractors) amounted to 386 ha. of plowed land; in 1956 it reached 505 ha. Especially great was the increase in the regions where virgin and fallow lands were being opened. For example, in the MTS of Omsk region in 1955 the annual work done by a tractor (in terms of 15-hp.tractors) was 667 ha. of plowed land as compared with 342 ha. in 1940. For Novosibirsk region corresponding figures were 607 ha. and 360 ha.

After completion of mechanization of the basic field work another task was advanced: in a short time to ensure a complex mechanization of all branches of kolkhoz production. This brought certain changes in recent years in the structure of tractor operations as may be seen from the following data about MTS of the Russian Federation: (See Table 1 on following page).

It is seen from this table that the volume connected with cultivation of the soil did not increase; sowing and harvesting of crops increased little; but the part of the basic field work in the total fell. In 1953 it made up 75.4% of the total volume of mechanized work (56.7% — cultivation of soil, 26.4% — other work); in 1956 — 63.6% (44.7% — cultivation of soil, 36.3% — other work).

During the period of mechanization of basic field work the work per tractor in the majority of the MTS was increasing from year to year. The expansion of the sphere of tractor work, in connection with the fact that some of these operations are carried out not in the fields and in a time free from the field work or even in winter time (haulage, preparation of feeds, getting of silage from pits, processing of flax, etc.) should have brought an increase of work per tractor. Yet an analysis of the mass data shows that lately in a number of the MTS the average annual amount of work done by each tractor was reduced. This may be seen from the data in Table 2 on the following page.

It appears from this table that in 1957 in the MTS of Omsk region and in the Chuvash ASSR the total work done by a tractor was 13% lower than in 1956, in Novosibirsk region — 12%, in Perm and Voronezh regions — 10%. Especially great was the deterioriation in the use of new, more economic tractors using diesel fuel. In the last three years in the MTS of Omsk region the work done by such a tractor during the year decreased by 306 ha. (in terms of plowed land), in Novosibirsk region — by 355 ha. This fall was caused by a decrease in the number of work days per year as well as by a decrease of work done per shift. The decrease in work done per shift may be seen from the data in Table 3 on the following page.

Thus in the MTS of Omsk region the average work per DT-54 tractor was reduced from 8.2 ha. in 1955 to 7.2 ha. in 1957. The work per shift in the majority of the Siberian MTS was even smaller than was achieved in 1953. In 1956 in 27 regions and republics of the Russian Federation the average work done per shift per 15-hp tractor in the MTS was smaller than in 1955.

The experience of the best MTS shows that there are great possibilities for better utilization of tractors. For example, in Podsosnovskaya MTS, Altai region, in 1956 the average work performed by a tractor amounted to 808 ha., in Krasnoyarsk MTS, Omsk region, to 815 ha. While the average work per tractor for all MTS of Pskov region amounted to 251 ha., compared with 302 ha. in 1953, the corresponding figures for Novoselskaya MTS were 381 and 154 ha. The increase of work per tractor in Novoselskaya MTS was obtained mainly through carrying out work in winter (bringing feed, peat and other fertilizers, sawing of wood, processing of flax, cleaning of grain, etc.) which made about half of all the work done during the year.

While the work per tractor of the MTS tractor fleet was decreasing, the most important field work in the collective farms was not carried out. From the figures in the tables it is seen that in 1956 all MTS of the RSFSR carried out 15.9 million ha. (in terms of plowed land) less work than in 1955. In 1957, by comparison with the preceding year, in many MTS (Altai region, Omsk region, and others) the volume of autumnal plowing and other operations continued to fall. In a number of regions the level of agricultural technique remains low and as a result of that some collective farms do not get as much as they should from these fields. Threshing, which consumes much labor, is far from being fully mechanized; in the regions of the north, northwest, and some regions of the central non-black earth zone the per cent of mechanization of sowing and harvesting of grain crops is from 50 to 75 only. The level of mechanization of sowing and harvesting technical crops, potatoes, and especially vegetables is rising only slowly. For example, in the RSFSR's collective farms in 1953 63% of the sowing of long-staple flax was mechanized; in 1956 the percentage was 61; for harvesting the corresponding figures were 30 and 26. 57% of potato planting was mechanized in 1955, 56% — in 1956. Mechanization of hay-making is progressing too slowly. The September plenum (1953) of the CC, CPSU, imposed an obligation on the collective farms to bring mechanization of mowing, raking and ricking of hay to 80% by 1955 and of stacking to 65%. Yet by 1956 only 48% of the mowing of hay on the collective farms of the RSFSR was mechanized; the corresponding figure for the non-black earth zone was 14% and for the regions of the north and northwest — even smaller. The work of bringing lime, organic, and mineral fertilizers to the soil is not sufficiently mechanized and the same is true about the work of improving meadows and pastures. Transportation by tractors and road improvement are not properly developed. At the same time the tremendous work of melioration and opening of the virgin and fallow lands must be carried out. It must also be noted that machines were not sufficiently utilized: during 1956 the average planting done by a potato-planting machine in the RSFSR amounted to 32 ha., in the Altai region to 18 ha. and in Pskov region to 3.5 ha.

The question arises: why is the tractor fleet not fully utilized and in many MTS the work per tractor falling, when there is so much work to be done on the collective farms? In his speech at the conference of best agricultural workers in Byelorussia Comrade N. S. Khrushchev showed the main cause of this situation. "There are two masters on the same land — the collective farm and the MTS," said he. "And where there are two masters, there cannot be good order. On modern farms everything depends upon the work of tractors and combines; yet a collective farm has to settle and even obtain concurrence in such a question as where a tractor should be placed. All this results in an irrational utilization of machines and is in detriment to state and collective farm interests."

It is known that the presence of two masters in the same enterprise inevitably creates contradictions and disagree-

TABLE 1

Years	1953	1955	1956	1953	1956
	Million hectares of plowed land			% of the total volume of mechanized work	
Total volume of mechanized work	295.4	366.8	370.3	100.0	100.0
of which:					
basic field work	222.6	245.9	235.8	75.4	63.6
of which:					
cultivation of soil	167.4	181.5	165.6	56.7	44.7
sowing, planting, and harvesting of all crops	55.2	64.4	70.2	18.7	18.9
Other work	72.8	120.9	134.5	24.6	36.3

TABLE 2

Regions:	Work done during the year per 15-h.p. tractor in hectares of plowed land			Work done during the year per DT-54 tractor in hectares of plowed land		
	1953	1957	1957 as % of 1953	1955	1957	1957 as % of 1953
Altai	531	496	93	1,576	1,423	90
Omsk	667	578	87	2,052	1,646	80
Novosibirsk	607	533	88	1,884	1,529	81
Voronezh	645	582	90	1,779	1,677	94
Ulyanov	581	551	95	1,676	1,469	88
Perm	477	423	90	1,271	1,181	93
Chuvash ASSR	522	453	87	1,486	1,249	84
Mordva ASSR	476	460	97	1,422	1,275	90

TABLE 3

Regions:	Average work done per shift per 15-h.p. tractor in hectares of plowed land			Average work done per shift per DT-54 tractor in hectares of plowed land		
	1953	1957	1957 as % of 1953	1955	1957	1957 as % of 1955
Altai	3.4	3.3	97	8.3	8.2	99
Omsk	3.3	3.0	91	8.2	7.2	88
Novosibirsk	3.4	3.0	89	8.1	7.4	92
Voronezh	3.7	3.5	95	8.1	7.8	96
Ulyanovsk	3.4	3.3	97	7.9	7.8	99
Perm	2.8	2.5	90	6.2	5.9	95
Chuvash ASSR	3.2	2.7	84	7.2	6.5	90
Mordva ASSR	3.2	3.0	94	7.5	7.1	95

ments between them, while contradictory guidance lowers the feeling of responsibility for the results of their productive activities. The main thing is that the MTS are not materially interested in the results of kolkhoz production activities. Moreover the system of payments to the machine operators — per ha. of work carried out — results in a striving to increase the work as expressed in ha. of plowed land, frequently to the detriment of the quality of work. Under this system there is "advantageous" and "disadvantageous" work for the MTS as well as for the collective farms. This contradiction between the two masters on the same land has become especially sharp at the new stage of development of the complex mechanization in all branches of kolkhoz production. The MTS sometimes simply fail to fulfill their contract with the collective farms in carrying out work which is "disadvantageous" for them.

Because of the relations established between the MTS and the collective farm, the contract between them to a considerable degree has become a piece of paper which places no obligations on the MTS, the latter being able to carry out tractor work in a volume larger than necessary for the collective farms. In a number of cases they make a contract for a smaller volume of work hoping that they will make up for the shortage in ha. (in terms of plowed land). Here, for example, is how the contract for tractor work between the Novoizborsk MTS, Pskov region, with the Gvardeets collective farm was carried out in 1957 (in terms of plowed land):

	Requested by the collective farm	Volume of work as required by contract	Actually done
Spring plowing	250	240	381
Plowing fallow	180	170	319
Harvesting grain by combines	225	300	426
Autumnal plowing	360	340	586

The time has arrived to raise the question of better utilization of modern technique which is a decisive means for a sharp upsurge of kolkhoz production. In view of this the decision of the February Plenum of the CC, CPSU, concerning the gradual reorganization of the MTS and the sale of machines to the collective farms is proper and timely.

The transfer of machines, now in the MTS, to the collective farms will put an end to the separation of collective farms from the means of production, inevitable in the past. It will make it possible for collective farms to utilize, as they see fit, powerful technique in the interests of raising the level of production and labor productivity; it will change the attitude of tractor drivers to their work (they will become interested in increasing yields and not in increasing the number of plowed ha. in their reports); it will expedite carrying out complex mechanization of the whole kolkhoz production and will make it possible to coordinate better the use of machines, animals and the labor force in agricultural work. It is known that lately in many districts of the country, in field and transport work, draft animals were practically not used and all work was entrusted to the MTS even on the plots which actually are not suitable for the use of tractors.

Of great importance for the improvement of kolkhoz livestock breeding is the mechanization of the time-consuming processes at their livestock breeding farms. Zootechnical personnel of the MTS accomplished the major task of raising the culture of livestock breeding on the collective farms. However mechanization of livestock farms is proceeding at a slow tempo. According to the available data in the collective farms of the Russian Federation, for example, in 1956 only 25% of water supply on the farms raising long-horned cattle was mechanized; the per cent of mechanization of milking was even smaller. At the same time the mechanisms and equipment available at the collective farms in a number of cases remained unutilized. Many machine units and much equipment lies in warehouses of the supply organizations. This happens because the technical personnel of the MTS helps the collective farms very little in the installation of and training for the use of equipment. In 1956 water supply equipment for 4.1 million long-horned cattle and pigs was installed on the collective farms of the RSFSR and of this the equipment for only 1.7 million animals was installed with the help of the MTS.

The transfer of machine operators from the MTS to the collective farms will improve the installation and use of the mechanical equipment at the livestock subfarms.

It must be noted that the MTS in effect are not responsible and are not taking part in the formation of their machine-tractor fleet. In the sheds and courts of the MTS for years machines of various trade marks have stood idle, as a result of which considerable state means have been wasted. For example, in the MTS of the Pskov region about 2,000 new machines supplied in the last two years are not used, machines for which there is a great need in the MTS of other regions. Yet the Pskov regional agricultural administration is reconciled with this situation, while agricultural administrations of the regions which need these machines, in turn, are not eager to take them, because it is easier for them to obtain these machines from the machine building plants than to collect them from individual MTS.

The procedure of distribution of machines according to the requests of the MTS, established recently, has remained on paper and actually the old procedure has been preserved. For example, the Pechersk MTS, Pskov region, had 16 combines for the harvesting season of 1957 which in fact stood idle (they harvested only 405 ha.). However, without MTS knowledge, 14 new combines were sent. The management of this MTS could refuse to take them, reporting about this to the regional agricultural administration. But they accepted them and used them as threshers. With the transfer of machines to the collective farms such a practice, wasteful and costly for the state, will end. A collective farm will not accept machines which it does not need, which means that machines will be utilized more rationally.

For the solution of one of the most important questions of kolkhoz livestock breeding—strengthening and developing the feed base—meliorative work is of great importance. In many regions of the country feed from natural grasslands and pastures occupies the leading place in the feed balance. However these natural grasslands and pastures are neglected by many collective farms. For example, in the regions of Siberia a large part of the natural grasslands and pastures is overgrown with bushes or trees or has become swampy. Thus in the collective farms served by the Tyumen MTS, Tyumen region, of 10,300 ha. of grassland only 1,900 ha. can be mowed with tractors. Thousands of ha. remain unmowed each year, while the livestock on the collective farms frequently experiences a shortage of feed. The collective farms of the northern, northwest, central and non-black earth regions in general have few grasslands and pastures. For example, out of 680,000 ha. of grasslands in the Pskov region there are only 225,000 ha. of "clean" grasslands.

In some regions, especially in the northwest and the center, the tractor fleet is insufficiently used because of the small size of the plots. In order to make them larger, it is necessary to carry out meliorative work and clear the fields of scattered trees and bushes. Also the great work of building ponds, water reservoirs and making road improvements lies ahead.

In spite of the importance of this work the MTS up to now do not pay proper attention to it and the available (though modest in number) meliorative machines are little used. Considering such work of secondary importance, the MTS not infrequently allow the stripping of meliorative machines for the use of their tractors in field work. Such a situation will change radically. If collective farms rent meliorative machines, they will be materially interested in their effective utilization. In turn the RTS, which will have to pay their way, also will be interested in their utilization. In view of this it will be advisable to entrust the RTS in a number of regions with carrying out meliorative work.

In a number of cases one of the causes of unsatisfactory utilization of the machine-tractor fleet is the poor quality of repairs. When the RTS take over repairs of machines for collective farms, the latter will demand better-quality repair work. Moreover in order to spread the labor of repair workers more evenly throughout the year, the RTS will be interested in carrying out repairs the year round, according to an annual load chart, and this will improve the quality of repairs and will make possible better use of tractors during the whole working season.

Speaking of the advantages of machine transfer to the hands of collective farms we have to note that at first there may be some difficulties connected mainly with the use of machines. In economically weak collective farms in a number of cases specialist mechanics and trained tractor drivers and combine operators will be absent. Necessary conditions for carrying out current repair and technical servicing also will be absent. It is also possible that there may be some difficulties in supplying small collective farms with tractors of some particular trade marks. All this requires a careful study and the preparation of concrete measures for the improvement of utilization of machines under the new conditions.

One of the causes of poor machine utilization is a wrong distribution of tractors among the MTS in respect to trade marks.

By the end of 1956 in the MTS of the RSFSR tractors with high horsepower made 72% of the total horsepower of tractors, while heavy work (all kinds of plowing, harvesting with combines etc.) in the same year made only 35% of the total volume of tractor work. In the MTS of the Altai region caterpillar tractors with large horsepower made up 87% of the total tractor fleet (the part of C-80 and DT-54 tractors was 73% of the total), while the part of tractors with medium and small horsepower was only 12%. In the MTS of the Oryol region 70% of the whole tractor fleet was made of powerful tractors, while the part of the heavy work was only 41%. The corresponding figures for the Stavropol region were 72 and 28. As a result of the shortage of cultivating tractors and tractors of medium and small horsepower, DT-54s are used for such light work as hay making and even interrow cultivation (in the Omsk region and in others). The data for the Altai region given below show the degree of utilization of tractors of various horsepower:

	Average amount of work per year in terms of 15-h.p. tractors in hectares of plowed land			Traction power of tractors on the hook (in h.p.)
	1954	1955	1956	
Trade marks of tractors:				
C-80	3.0	3.2	3.1	69
DT-54	3.4	3.5	3.3	36
CHTZ	4.4	4.4	4.5	15
Universal-2	5.6	6.5	6.5	10

Thus, the smaller the horsepower of a tractor, the larger (per hp.) the average work of a tractor performed in the MTS of the Altai region. The reason for this is that the volume of various relatively light work and work on a smaller area such as cultivation of potatoes, technical crops and vegetables, which has to be carried out with tractors of medium and small capacity, is now increasing.

Calculations show that tractors with medium and small horsepower should make not less than 40 to 50% of the total hp. capacity of the tractor fleet. But if formerly an MTS could serve with one tractor, for example, with a vegetable tractor, two collective farms, now, with the transfer of machines to the collective farms two tractors will be needed. In view of this an increase in production of wheel tractors of medium and small horsepower is of primary importance. Mistakes are also made in the distribution of powerful C-80 tractors by individual regions. Though fundamentally C-80 tractors were designed for meliorative work, they are used unproductively in field work by the MTS of the Altai region, the Omsk region etc., while in the MTS of Tyumen, Kemerovo, and other regions, because of the shortage of these tractors, the work of rooting out trees is carried out by DT-54 tractors and this leads to their premature wear and tear.

Now the majority of the MTS are fully supplied with powerful tractors (with the exception of harvesting combines) for carrying out all types of field work in a short agro-technical time. Yet a large number of them is still being sent to MTS. For example, the MTS of the Altai region need about 9,000 tractors of the DT-54 type for carrying out work in the time prescribed by agro-technique in the period of most strenuous work—that of autumnal plowing. Such a number of tractors would ensure carrying out all kinds of plowing and other heavy work during the whole agricultural season. However, as the autumnal plowing here is carried out simultaneously with the harvesting of grain crops, from 9,000 to 10,000 additional DT-54 tractors are needed for the use of available harvesting aggregates.

At present there are about 3,000 powerful tractors (in terms of 36-hp. DT-54s) in the Altai MTS, that is, more than is necessary to carry out field work in the time required by agrotechnique, and in this number tractors of other trade marks (Belarus and others) which can be used in field work are not included. In spite of this, supplying Altai MTS with tractors continues. The cause of this is the fact that attachable combines, which are the main type there, can be hitched only to a powerful tractor of the DT-54 type. This abnormal situation should be ended the more so because the collective farms will not buy tractors which work only from 15 to 20 days a season.

With the transfer of machines to the collective farms working out of a rational system of machines for various conditions of production becomes a matter of special importance. For example, up to now a practical system of machines for the regions of the north and northwest does not exist and the agriculture of those regions is supplied with machines which in fact are hardly suitable for the conditions of this moist zone, for example, with tractors (chiefly DT-54) and combines designed for the steppe zone. Under conditions of moist soils and small plots the heavy, powerful DT-54 tractors with narrow tracks are used mainly for plowing and transportation. For other field work (sowing, cultivation etc.) there are no tractors here. Belarus wheel tractors are little used in many MTS for field work and if used are used mainly in a fixed position. The situation with combines is even worse. Self-propelled combines operate there with difficulty, while long-strawed, moist grain plants wind around the cylinder of the machine. Uniflow combines PK 2.5 up to now have not shown good results in this region. The MTS of this region also have no good machines for carrying out meliorative work and for mining peat. In connection with the transfer of machines to the collective farms, experiments and tests of the economic effectiveness of various machine trade marks in different regions of the country must be organized on a large scale.

Another important cause of the low productivity of tractors in some districts is their supply without first finding out whether the MTS have machines which can be attached to these tractors and if they do not have them, supplying them with such machines. As a result, in a number of the MTS there is a disparity between the capacity of the tractor fleet and of the machines which can be attached to them. The tractors were supplied to the MTS on the basis of need at the period of greatest strain during the season of field work and this period in the majority of the regions is short. In the remaining period of field work the tractors stand idle most of the time because of the absence of machines to be attached to them. Frequently DT-54 tractors are supplied with plows and—which is a little better—the number of plows supplied corresponds to the number of tractors. But it is known that the life of a plow is shorter than that of a

tractor and so, naturally, this finally results in a shortage of plows. It is time to think seriously how to reduce the supply of tractors and increase the production of attachable machines. The transfer of machines to the collective farms makes this problem even more pressing.

***

An important factor in increasing the productivity of labor in agriculture and lowering expenses per unit of product is the highly productive utilization of machines. The economic effectiveness of the tractor fleet can be raised only through an increase in production per shift and per year.

Some economists assert that as the number of tractors in agriculture increases, the annual production per tractor must decrease. Because of that they consider that it is not advisable to aim at a high annual productivity per tractor: high productivity, they think, is the result of prolonging the period of field work. Presumably these comrades think that tractors are used only for field work and forget that under present conditions the volume of tractor work can be increased through their use in various branches of the economy where additional work, as a rule, is carried out during the period when tractors are not used for field operations.

Let us compare the use of the tractor fleet of the MTS in the Tyumen region and the Krasnoyarsk region.

	Productivity per day per 15-h.p. tractor in hectares of plowed land		Total number of days worked per year per 15-h.p. tractor		Total work done during the year per 15-h.p. tractor in hectares of plowed land	
	1955	1956	1955	1956	1955	1956
Tyumen region	4.7	4.6	130	132	615	606
Krasnoyarsk region	4.4	4.4	113	120	498	500

As may be seen from this table, the MTS of the Tyumen region carried out more work per tractor in terms of 15-hp. tractors than the MTS of the Krasnoyarsk region, not only because of the large amount of work done per day, but also because of a larger number of days during the year when tractors worked. A large volume of work per day makes it possible to carry out field work in a shorter time. Thus an increase in volume of work per year in the MTS of the Tyumen region is the result of the use of tractors for meliorative and other work.

How great is the economic importance of increasing the volume of work per year per tractor may be seen not only in the experience of a number of the best tractor brigades which apply cost accounting and obtain the highest annual productivity per tractor, the highest yields and the lowest costs per unit of product, but also in the data for the best MTS of individual regions in 1956, as may be seen from the following table:

In each of these MTS the annual productivity per tractor is considerable higher than the annual productivity per tractor for the whole region and this made it possible for them to obtain high yields of grain at a smaller expenditure per unit of product. The same regularity appears in the table next page covering many collective farms for 1956.

These data show that in the Altai region and the Moscow region (in each of which the yields per ha. for each group of the MTS were almost the same), for the groups with higher annual productivity per tractor, the cost of one centner received as payment in kind for work was lower than for the group of the MTS with lower productivity: in the Moscow region the difference was 45 rubles for grain, 54 rubles for meat and 66 rubles for milk. In the Rostov region the group of the MTS with higher annual productivity per tractor obtained higher yields (13.6 centners per ha. instead of 10.2 centners per ha.).

The analysis of the cost components shows that with the growth of the annual productivity per tractor all cost items of tractor use are reduced. Especially great is the reduction of expenses on repairs.

***

The decision of the CC, CPSU, concerning the reorganization of the MTS and the sale of machines to the collective farms will result in a further strengthening of the kolkhoz regime, will contribute to a considerable increase in agricultural production, to the growth of labor productivity in agriculture and in lowering of expenses per unit of products. Only the collective farm itself, being the master of land, labor force, and machines, will be able to ensure the best utilization of all means of production, including tractors, and draft animals.

It is known that in the tractor fleet of the MTS there are many powerful tractors which cannot be properly utilized in smaller collective farms. At a new stage in the development of agriculture it will be necessary to increase sharply the production of tractors of medium and small horsepower. The State Planning Commission and the Ministry of Agriculture of the USSR should take this into consideration in drawing up a perspective plan of development of the national economy for 1959-1965. In that plan special attention should be paid to the production of combines. As a rule, C-6 hitched

	Annual productivity per 15-h.p. tractor in hectares of plowed land	Yield of grain crops in centners per hectare	Cost per centner of payments in kind to the MTS in rubles
Novosibirsk region:			
Demyanovsk MTS	674	18.3	40.40
Mokhnatologovsk MTS	707	14.3	58.40
The region as a whole	580	11.2	63.60
Krasnoyarsk region:			
Kazantsevsk MTS	624	15.0	60.00
Uspensk MTS	678	14.1	70.80

Grouping of the MTS by annual productivity per 15-h.p. tractor in hectares of plowed land	Number of MTS in the group	Average productivity per 15-h.p. tractor in hectares of plowed land	Yields of grain (centners per hectare)	Cost per centner of payments in kind (rubles per centner)			Cost per hectare of plowed land in rubles
				grain	meat	milk	
Altai region:							
up to 450 hectares	21	388	17.0	50	619	214	34.60
more than 450 hectares	19	507	16.7	45	614	140	30.00
Rostov region:							
up to 720 hectares	15	635	10.2	51	531	128	25.20
more than 720 hectares	15	781	13.6	39	512	108	25.70
Moscow region:							
up to 340 hectares	13	293	10.9	191	1,098	287	50.90
more than 340 hectares	11	374	10.7	146	1,044	221	47.50

combines can be used by large collective farms. As to the self-propelled combines, they may be used more widely in separate [razdelnaya] harvesting. However such combines cost considerably more than the hitched combines and so not every collective farm can buy them and it is not economical to use an expensive machine for 10-15 days during the year. Beside self-propelled combines we should also produce combines on self-propelled chassis of different widths. Such a chassis can be used by collective farms in the period free from harvesting work.

In recent years the production of agricultural machines has been greatly increased. However the ratio between the available horsepower of tractors and the available attached machines and implements is far from satisfactory. In future years there should be a big increase in the supply of attached machines and implements now in short supply.

Up to now agricultural organs, and the USSR Ministry of Agriculture at their summit, in fact had not studied the question of the economics of machine utilization and this resulted in mistakes in the supply of the MTS with machines. Under new conditions, when machines are transferred to the collective farms, a study of the economic effectiveness of the utilization of various machines and trade marks acquires special importance. Without it proper supply of the collective farms with new machines and propaganda for their use by the collective farms are impossible. Studies of the economic effectiveness of machines of various trade marks should take place on a large scale directly on collective and state farms and in these studies different soil and climatic conditions should be taken into consideration. In connection with this it is necessary to re-examine the system of machines worked out for various zones. Special attention should be given to making a system of machines for the regions of the north, northwest, White Russian SSR and Baltic republics more fitting their conditions. Only improved, suitable machines should be sent there.

As a result of the sale of machines to the collective farms inevitably there will be a surplus of machines in some MTS, in others—a shortage. This should be taken into consideration and concrete measures should be taken in time for a corresponding redistribution of machines among the MTS and collective farms of the various regions of the country.

In connection with the transfer of machines to the collective farms the question of supplying collective farms with spare parts and repair materials acquires special importance. It is necessary to take all appropriate measures in order to satisfy fully the need of the collective and state farms in spare parts and repair materials for the machine-tractor fleet. An important role in this respect belongs to the economic councils of the corresponding economic regions.

A. Omarovsky:

Types, Organization and Location of Enterprises for the Repair of Agricultural Machines

Every year USSR agriculture receives tens of thousands of tractors, trucks, combines, and other agricultural machines and implements. There are now on the fields of the country about 1,700,000 tractors (in terms of 15 hp.), more than 450,000 grain combines, 660,000 trucks, and many other agricultural machines. Their repair occupies more than 500,000 workers and its annual cost is more than seven billion rubles. However, the productivity of repair workers is from three to four times lower than that of machine building workers. The main cause of this is that the repair enterprises are small and cannot organize their work on a mass-conveyer basis or even on a large serial basis.

The shops of the MTS became the leading "link" in servicing the fleet of machines. They repair tractors, combines, and other machines which belong to the MTS; in the repair plants and interdistrict capital repair shops motors and equipment are repaired; on the kolkhoz forges simple agricultural machines and implements are repaired. The fact that a large number of the MTS shops have modern equipment makes it possible to improve the organization of repairs. For example, the standard shops of the MTS, according to their blueprints, should each have from 10 to 12 universal metal-working lathes, 30 to 35 different presses, stands, and other equipment.

A serious defect in the work of the shops is its seasonal character. In the summer machines are not brought for repairs and this results in their idleness in the field. In view of this expenditures on technical servicing are actually equal to the cost of repairs. For example, expenditures on technical servicing of MTS in the Russian Federation now reach 30% of the total cost of technical servicing and

repair of machines. Machines are frequently repaired directly in the field and this, of course, lowers the quality of repairs, prolongs them, and increases their cost. Agriculture now uses throughout the year many complex machines and mechanisms. This makes it possible to prepare a proper load chart of repairs of individual machines and mechanisms and assure a more rational work load for repair shops without interrupting the progress of field work.

However, serious defects in the functioning of shops and plants continue to prevent the proper organization of repairs. Tendencies of the narrow departmental interests in the USSR Ministry of Agriculture resulted in production by the repair enterprises of metal-cutting lathes, bulldozers, and various tools for agriculture. In a number of enterprises of this kind the repair work amounted to no more than 30% of the total work load. Gradually some plants (Eisk, Slavgorod and others) had become not repair shops, but machine building plants and were transferred to the former Ministry of Machine Building and Instrument Industry.

The rather small scale of production, the large amount and the character of work done in the repair enterprises frequently resulted in the fact that more time was spent on the repair of an old machine than it would take to manufacture a new, more productive machine. For example, at the Kuban MTS, Stavropol region, 18,358 rubles were spent on the repair and technical servicing of a DT-54 tractor, while payments for the work of that tractor amounted to only 2,891 rubles and a new DT-54 tractor cost 19,500 rubles. Many other similar facts could be cited.

The July (1955) plenum of the CC, CPSU, recognized the necessity of bringing better order into the repair economy and reducing repair mainly to the operations of changing parts, units and aggregates. For this purpose production of spare parts, units, and aggregates at specialized enterprises with a limited assortment and with the use of modern technology was organized. Centralized production of spare parts for mass consumption improves technical servicing of the functioning fleet of machines and implements. However, in a number of cases it may be worthwhile to repair old parts, units, and aggregates. This work can be done most economically in special enterprises or in specialized sections of repair plants.

In considering the question of reorganizing the MTS we must give a short characterization of the present state of the repair economy. The transformation of the MTS into RTS (Repair-Technical Stations) should be accompanied, in our opinion, with the freeing of the RTS from the task of repairing complex aggregates and units, which should be done by specialized plants. The economic effectiveness of a large repair enterprise can be seen from the following analysis carried out by docent E. M. Karlik (page 26). For his analysis he took car repair plants with capacities of 900, 3,000, 5,000, 10,000 and 20,000 capital repairs a year. His comparison shows that with an increase of the capacity of a repair plant from 900 to 5,000 and 10,000 capital repairs per year the methods of production, the character and composition of the equipment established in the plant, the composition and qualifications of the personnel, the length of the production cycle and all technical-economic indices of the enterprise's work were changed.

With an increase in the volume of production the cost of construction of the plant is reduced and the cost of capital repairs is lowered. If the volume of production is increased from 900 to 3,000 repairs a year, the expenditures of labor are reduced 25% and with an increase of volume up to 5,000 repairs it is reduced an additional 24%, while with an increase of capacity up to 10,000 repairs expenditures of labor remain almost the same. The most effective appear to be enterprises with a volume of capital repairs from 5,000 to 10,000 repairs a year. Here we should also consider not only intraplant organization of production, but also the cost of transportation of repaired units to the consumers as well as the time needed for repairs.

The experience of the best MTS and repair enterprises shows that with proper, precise organization of labor it is possible to organize in the plants year-round capital repairs of the basic units and aggregates. Let us cite a convincing example in that respect. The personnel of the Cherkess repair-mechanical plant "Molot" repair motors and deliver them to the MTS throughout the year. The work is planned on the basis of contracts with the MTS which also present charts of motor changes in certain tractors. Formerly, when the MTS themselves brought the motors and took them away, the machines were idle for more than three weeks. Now a brigade of the plant delivers the repaired motor (or any other unit) by truck to the MTS, installs it, and makes a trial run of it in the presence of the MTS representatives. The motor to be repaired (or any other unit) is sent to the plant with the same brigade. With such an organization the change of a motor takes from 40 to 60 minutes.

For the delivery of the motors to the MTS and their change on the spot the plant charges the MTS an additional payment for each km. from the plant. Delivery of one motor for a distance of 100 km. costs 200 rubles, of two motors—100 rubles each, of four motors—50 rubles each.

The plant determines the volume of its work on the assumption that it will do capital repairs of the motors for all MTS which are close to it. In order to cut down the expenses of transportation and improve the servicing of the MTS it is planned to establish in the Stavropol region three points for exchange of motors. Each of them will serve MTS of a certain zone within a radius of from 100 to 150 km. The plant delivers repaired motors to these points by railroad and then they are delivered to the MTS in its trucks and installed in the tractor.

In the capital repairs of tractors, combines, cars and trucks the expenditures for motor repairs make up half of all expenditures, as may be seen from the following data of the plan:

Expenditures for Capital Repairs (in Rubles)

Machine trade mark	Total for the machine	Expenditures for the repair of the motor (included in the total)
ZIS-150 car	6,400	3,034
GAZ-51 car	5,350	2,600
DT-54 tractor	6,730	2,660
Hooked combine	3,650	1,110

The weight of the motor makes up about 1/5 of the weight of the machine and amounts to 430 kg. in the case of a Universal tractor, 740 kg. for a Belarus tractor, 730 kg. for a KDP-35, 1,100 for a DT-54, 2,030 kg. for a C-80, 300 to 600 kg. for trucks, and 150 to 200 kg. for passenger cars. The average distance from the repair shops and plants to the MTS and state farms, both ways, amounts to 100 to 150 km. This means that for the delivery of all motors (from 3,000 to 4,000 a year) a motor repair plant will need no more than three trucks, and the cost of transportation of each motor both ways will be no more than 200 rubles.

The centralization of repairs results in 1,000 to 1,200 rubles economy per motor of a caterpillar tractor and 500 to 600 rubles economy per truck or combine motor. Thus

Technical-Economic Indices of Car Repair Plants of Different Capacities

Indices per unit of repair:	Annual capacity of the plant per year (in theoretical units of repair)				
	900	3,000	5,000	10,000	20,000
Area (in sq. mt.)	6.6	4.1	3.8	2.8	2.1
Cost of equipment (in rubles)	718	760	788	536	426
Expenditure of labor (in man-hours)	416	311	214	208	no data
Production per worker	3.6	3.2	4.2	5.1	6.7
Cost of capital repairs (in rubles)	3,900	3,200	2,393	no data	no data

the expenses of transporting motors will be fully justified. Moreover, as demonstrated by experience, in the case of centralized repairs the quality of repairs is considerably higher and this makes it possible to utilize agricultural machines after the repair much better and in this way to increase the productivity of labor in agriculture.

The creation of powerful specialized repair plants results in great economic savings. For example, at the First Kiev Truck Repair Plant annually more than 6,000 trucks and more than 2,000 full aggregates are repaired; in addition more than 1,000,000 rubles worth of spare parts for other truck repair plants and truck organizations are produced. A large volume of production made possible the organization there of a conveyer for carrying out basic truck repair operations. The new organization made the work more rhythmic and improved the economic indices of the plant: in three years since the introduction of modern technology the need of labor for the repair of trucks was reduced 2.3 times, the cost of repairs—almost twice.

The February decisions made by the CC, CPSU, concerning reorganization of the MTS were widely discussed. In the course of the discussions suggestions were made concerning supplying kolkhoz repair shops with everything necessary for carrying out current and medium repairs. If such suggestions were approved, the MTS would have to sell to the collective farms not only tractors and agricultural machines, but also metal-cutting lathes and other equipment of their shops. In our opinion this would be a mistake and this is why: Even now the equipment of the MTS repair-mechanical shops is not fully utilized. If it were transferred to the collective farms, it would be used even less, while the quality of repairs would deteriorate. A collective farm should have only the equipment needed for technical servicing and repairs connected with the substitution of worn-out parts with new ones or those restored at specialized plants, as well as one composite lathe for adjusting parts and manufacturing the simplest spare parts.

In industry there is now a tendency toward the formation of central repair plants and this tendency properly reflects modern technical progress. For example, in the Kirgiz SSR it was decided to establish a network of powerful repair bases of a specialized type. For the Osh and Dzhalal-Abad regions, where enterprises of the coal industry, non-ferrous metallurgy, and petroleum industry are found, it is planned in the city of Kyzyl Kiya to build a plant for the repair of shaft sinking, mining, and petroleum equipment. It is also planned to establish in a number of points specialized enterprises for the repair of other kinds of equipment. Specialized repair is carried out under the Moscow regional, the Sverdlovsk, and other regional economic councils. In the future the remaining economic councils should organize on an appropriate scale the production of new, and the restoration of worn-out parts for tractors and agricultural machines as well as factory repair of complex aggregates and units. In the theses of Comrade N. S. Khrushchev's report the necessity of a careful study of a system of supplying collective and state farms with spare parts was emphasized. Here economic councils and our industry have a great responsibility. They must ensure that collective and state farms are fully supplied with new and restored parts and equipment. Presumably the restoration of parts should be carried out by centralized methods so that such work is of high quality.

The great importance of spare parts production is determined by the fact that they make up more than half of the cost of repairs. It is enough to say that each MTS spends annually an average of about 300,000 rubles on spare parts.

In order to find a proper solution to the question of repair plant organization under new conditions it is necessary to carry out a detailed investigation of the need for repair work, to consider special features of the use of each kind of machine and different lengths of time machines function without repairs for all regions of the Soviet Union. If, for example, we take as our starting point the work of machines done in the Uzbek SSR in 1953, according to the established standards of interrepair periods, repairs should be carried out as follows: after completion by a C-60 tractor of not more than 1.4 seasonal standards of work; DT-54—1.7, STZ-NATI—2.6; SHTZ—1.6; Universal—0.7. For the MTS of the Stavropol region a DT-54 has to complete only 0.6 of the seasonal standard of work and a SHTZ—1.1 of the standard in order to be sent for repairs.

On the basis of available statistical data we prepared the following table:

Grouping of Regions by the Number of Tractors in 1956

Number of tractors in the region (in thousands, in terms of 15-hp. tractors)	Number of regions having this number of tractors	Suggested number of motor repair plants for that group
below 5	22	30
from 5 to 10	39	45
from 10 to 15	28	40
from 15 to 20	14	24
from 20 up	20	20

Calculations on the basis of these data show that from 150 to 200 specialized motor repair plants must be built in the USSR. These would ensure high quality effective motor repair.

In the work under new conditions great importance must be attached to the question of determining the complexity of repairs and the ratio of different types of repairs to each other in plants and repair shops. According to the former MTS rule annually 50% of the whole fleet of tractors should have capital repairs and 50%—current repairs. Though it is not necessary to dismantle each tractor every year, to

perform capital repairs, test and regulate it; yet, as a rule, its motor and fuel apparatus should be checked carefully every year and, if needed, a capital repair made.

An analysis of the labor time needed for capital and current repairs of 15 CHTZ-NATI tractors shows that the expenditure of time on subsidiary work (forge work, welding, bench work after welding, machine work) was almost the same for both types of repair (109.3 hours per tractor were required for current repairs and 104.4 hours for capital repairs). Yet, according to the standards, the work of subsidiary sections requires 50.5 hours for current repairs and 74 hours for capital repairs. On the basis of experience it is possible to state that the difference between capital and current repairs is disappearing, especially if we remember that in the case of capital repairs a larger and larger part is occupied by the substitution of worn-out aggregates with new ones, especially considering the transition to the uninterrupted conveyer-unit method of repairs. That is why, in order to improve the work of repair plants and simplify the charges for repairs it would be better to introduce one kind of repairs—"repairs at the repair plant," instead of several existing kinds—capital, medium, current. Payment for this repair should be made according to its actual cost and not according to an average cost as was formerly the case.

We should also leave it to the collective farms to decide the question of whether they should repair the old motor or buy a new one. We should also prepare price lists for spare parts and price lists for various repairs of aggregates so that when an agreement is formally reached at the plant, the cost of repairs can be determined at once.

In connection with the location of plants for the repair of agricultural machines a question arises: how great an area motor repair plants should cover. If the plant making from 5,000 to 10,000 repairs a year is most effective economically then it is enough to build one or two and only in a few cases three such plants in each region or autonomous republic. It would be advisable to place these plants under corresponding economic councils. The repair enterprises of the Ministry of Agriculture were dispersed throughout the country and their technical guidance was weak. Now the situation has radically changed. Almost every economic council has machine building administrations which can operatively help the repair plants to organize their work on the basis of the application of modern technique and technology.

It is necessary to carry out the repair of tractors, combines, and automobile motors, as well as the most complex aggregates, in the repair plants and interdistrict capital repair shops using the mass production-conveyor method. Only under such conditions will it be possible to ensure the high quality and the low cost of repairs of the most important aggregates. Repairs of the running gear and other simple units and aggregates may be organized at the RTS and, in a number of cases, on the collective farms themselves because gradually such repairs will be reduced to a replacement of worn-out parts with new ones or with parts restored at specialized plants.

B. Shubkin:

Help Economically Weak Collective Farms

In the decision of the February Plenum of the CC, CPSU, "Concerning further development of the kolkhoz regime and reorganization of the MTS" a grandiose program has been advanced, ensuring a new, powerful upsurge of kolkhoz production. Realization of the measures outlined by the Party will make it possible to bring into action tremendous reserves latent in our agriculture, to improve the utilization of machines, land, and labor force, and to obtain a considerable increase in the products of husbandry and livestock breeding with the simultaneous reduction of the expenditure of means and labor per unit of product in all the collective farms of our country.

Reorganization of MTS work is called forth by the necessity of the further growth and improvement of socialist production relations. At the first stage of kolkhoz development the Soviet state found in the MTS that form of utilization of agricultural technique which contributed most to the development of the productive forces in agriculture. The MTS ensured the highly productive utilization of tractors, combines, and other machines. They served as a powerful lever for influencing collective farms by the proletarian state, a means of strengthening the alliance of the working class and peasantry. Having played an important part in the development of our agricultural productive forces, the MTS in this way actively contributed toward the creation of conditions for the transition to a new stage of development of the kolkhoz regime.

At the new stage of kolkhoz development the existing form of productive-technical servicing of collective farms through MTS ceased to answer the needs of development of the productive forces in agriculture. Under new conditions, when the majority of the small and economically weak collective farms were transformed into large and economically strong ones, armed with the latest technique, when the collective farms formed numerous cadres of experienced workers and the incomes of collective farms and of their members considerably increased, there began to be noticeable unfavorable consequences of the separation of the labor force, concentrated in the collective farms, and of the basic tools of production, belonging to the MTS. The director of the MTS, using technical means, in fact was not responsible for the utilization of land, while the chairman of the collective farm, responsible for the utilization of land, could not order machines to work. This prevented the rational utilization of technical means, land, and labor and slowed down the growth of the kolkhoz economy. In view of this the measures outlined by the Party in respect to the reorganization of the MTS, undoubtedly will contribute to the growth of all collective farms of our country.

***

The reorganization of the MTS will help to overcome the lagging of the economically weak collective farms. Measures carried out by the Party in recent years, such as increase of procurement and purchasing prices, cancellation of kolkhoz indebtedness, reduction of the rates of agricultural tax, etc. —considerably strengthened these farms. Now even economically weak collective farms are, as a rule, large farms with extensive land holdings and this makes possible an effective use of machines on them. A considerable number of such farms in the last years has been strengthened with experienced workers. However, the low level of intensity of agriculture on these farms and an insufficient and uncertain supply of labor and means of production unfavorably influence the material incentives of their members and this, in turn, retards raising the level of intensity of their agriculture. In order to eliminate these defects we should first of all raise the level of mechanization on these farms. But the existence of two masters on the same land (beside other contributing factors) under present conditions prevents the solution of this problem. This may be shown by the example of three MTS, Shakhov district, Moscow region, servicing

collective farms with different conditions of production. The data concerning the volume of their productive activity is given below (in ha. of plowed land per 100 ha. of agricultural land):

	1955			1956			1957		
	grouping of collective farms by production								
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
1st Shakhovsk MTS	296	213	241	213	172	161	226	185	204
Seredinsk MTS	331	238	220	274	212	221	292	262	240
3rd Shakhovsk MTS	246	256	236	219	191	210	238	332	256
Average for the district	257	236	232	243	186	188	264	241	224

In the first production group are included eight farms best supplied with labor power and means of production; in the second—twelve collective farms with an average (for the district) supply of means of production and labor power, and in the third—ten farms poorly supplied with means of production and labor power. As may be seen from the table, the MTS carried out most of the work in the collective farms of the first group and least of all in the collective farms of the third group with the least intensive agriculture. But the low intensity of the economy of the last group is not the result of low labor activity of its members: each able-bodied member here contributed 156 more labor-days than members of the first group. The low intensity of agriculture in the third group is due first of all to the shortage of labor power and means of production. One could expect that the MTS would ensure a higher level of mechanization on these farms. However at a district Party conference in 1957 it was pointed out that in the weakest collective farm of the district—"For Communism"—where there is a great shortage of labor power and means of production, only 49.8% of the plan of tractor work was carried out and the productivity of a 15-hp. tractor amounted to a mere 169 ha., while in the whole zone of the First Shakhovsk MTS productivity per tractor was 267 ha.

The small amount of help rendered to the collective farms by MTS is explained not only by the defects in the work of the MTS of that district, but also by other factors and in particular by insufficient material incentives for the workers of the tractor brigades working on the kolkhoz fields of the third group. On these farms the connection between the payments for tractor drivers' work and the quality of their work is very weak, because payment for a labor-day does not rise above the guaranteed minimum. Moreover payment for the work of the members of the tractor brigade on economically weak collective farms is fequently delayed. For example, in 1956 the collective farms were to supply 1,455 centners of grain as a guaranteed minimum for the workers of the First Shakhovsk MTS, but actually supplied only 497 centners. The main defaulters were economically weak collective farms. Naturally all this does not encourage the machine operators serving the collective farms of the third group to do a better job.

However, the most serious difficulties which prevented the further growth of these collective farms are connected with the fact that under present conditions the existence of two masters on the land—the collective farm and the MTS—results in a lack of initiative, an absence of personal interest in the results, and irresponsibility; it prevents all-around study and utilization of the natural and economic peculiarities of the collective farms which should be considered for proper exploitation of tractors and other machines and for carrying out agricultural work on time. In connection with this a number of districts of our country started a search for forms of mutual relations between the MTS and the collective farms which would make possible better utilization of the machines, land, and labor force of the latter.

Of great interest in that respect is the experience of the Third Shakhovsk MTS (serving nine kolkhozs) in a new kind of relations with the Pobeda collective farm of the Shakhovsk district, whose chairman was V. M. Yegorov. The natural and economic conditions of this district were similar to those of many districts of the Central, North-West, White Russian and Baltic republics. The Pobeda collective farm had no advantages over other collective farms.

In terms of production conditions the Pobeda collective farm belonged to the group of farms with an average (for this district) supply of labor power and means of production; there were 13 ha. of agricultural land per able-bodied member. Because of a great shortage of labor in this collective farm the question arose of raising the level of mechanization. However, the Third Shakhovsk MTS did not render significant help to the collective farm in that respect. Frequently machines were standing idle, the work was not done on time. The workers of the MTS were indifferent to the question whether the production plan of the collective farm as a whole was carried out or not. The MTS was also not helping the collective farm in livestock breeding and construction work. Old forms of relationship between the MTS and the collective farms prevented the rational utilization of the machines.

At the beginning of 1957 the chairman of the Pobeda collective farm suggested that this farm and the MTS sign a "non-standard" contract along the following principles: the collective farm pays to the MTS the whole amount of payments in kind according to standards; the MTS carries out machine repairs, but during the period of field work all machines are fully at the disposal of the collective farm. This suggestion received the support of the Party organization, members of the farm and machine operators of the MTS.

The Pobeda collective farm and the Third Shakhovsk MTS signed a contract according to which the Third Shakhovsk MTS transferred machines to the farm for the period from April 9th to December 30th, 1957, nine tractors, as well as machines attached to them, soil cultivation machines, sowing and harvesting machines (plows, harrows, drills, potato planters, mowing machines, hay spreaders, crane hay stackers, flax scutchers, flax threshers, combines, potato-digging machines, cisterns, barrels, service carriages, etc.). They agreed upon the volume of tractor work for which the MTS was to supply fuel in accordance with standards. The gasoline carriers of the MTS were to deliver it to the collective farm. The MTS was also to supply spare parts for the tractors and carry out repairs to the total value of 9,878 rubles. Repairs above that figure were to be at the expense of the collective farm. The

engineers and technicians of the MTS were to carry out technical supervision and render necessary technical help to the farm. Finally, the MTS transferred to the collective farm an advance for the payment of labor-days of the brigadier, his assistant, time recorder, and tractor drivers of the tractor brigade, a total of 26,000 rubles, or four rubles per labor-day.

In turn the kolkhoz board undertook an obligation, at the discretion of the collective farm, and on the basis of economic considerations, to use tractors and other machines for carrying out necessary work (a total, in terms of plowed land, of 4,651 ha.). For this volume of work the collective farm guaranteed the delivery to the state of the following amounts of products in centners: milk—126.6; meat—55.4; grain—564.3; potatoes—509; vegetables—5.4; flax seeds—2.5; flax fibers—182.6; and 15,482 rubles in money. The collective farm took upon itself full responsibility for the safety of the MTS machines, undertook to build sheds and a small shop for technical servicing and current repairs of machines, to pay the MTS the cost of delivery of fuel and lubricants, to bring to the actual place of work tractors, machine fuel, water, etc. For its work the collective farm selected tractor drivers, combiners, and other machine operators among the constant workers of the MTS who expressed a willingness to work for the farm. It paid them wages according to standards and rates established by the kolkhoz board and took upon itself responsibility for technical safety. When, with the completion of field work, machines were free, the collective farm, in accordance with plans of technical servicing, repaired them with the manpower of the tractor brigade. During the length of the contract the collective farm gave at its expense to tractor drivers and other machine operators annual leaves on the basis of existing regulations for such personnel. On signing of the contract the machine operators and all machines were transferred to the collective farm.

Before conclusion of the contract many doubts were expressed. In particular an opinion was expressed that this measure would slow down the utilization of machines, lower material incentives for machine operators to get better results out of their work, etc. Life showed that these fears had no basis. The transfer of tractors and other agricultural machines to the management of the collective farm ensured their better utilization. Productivity per 15-hp. tractor increased from 152 ha. in 1956 to 326 ha. in 1957, or more than twice. DT-54 tractors were used especially intensively. These caterpillar tractors gave per hp. three times as much work in terms of ha. of plowed land as the 15-hp. wheel tractor. The increase in work done by machine operators and the sharp increase of productivity per hp. took place simultaneously with a decrease in the number of tractors used and in the number of machine operators. This was the result of the elimination of superfluous positions. Tractors and other machines were ordered to work directly by the chairman of the collective farm, while the work in the field was headed by the brigadier of the field brigade at whose request necessary machines were sent. Technical servicing of the tractors and their repair was done by a mechanic. With such organization there was no need for such positions as a brigadier of a tractor brigade or his assistant. This made it possible to save labor-days on the one hand and to attract more experienced workers for work with tractors.

Field work in 1957 was completed in a better agrotechnical time. The spring field work was finished ten days, and harvesting one month earlier than in 1956. At the same time the structure of the work carried out by machine operators underwent important changes, as may be seen from the following data:

Kind of work	Amount of work done in terms of hectares of plowed land	
	1956	1957
Total	3,829	6,874
of this:		
Plowing	607	877
Cultivation	26	4
Cutting and closing of the furrows	10	6
Levelling and compressing of the soil with a schleife	30	16
Disking	421	88
Harrowing in an aggregate	140	60
Independent harrowing	173	339
Silage work	71	102
Covering of silage	-	70
Haystacking	14	48
Earth work	-	80
Transportation work	948	2,893

As may be seen from the table, changes in the structure of work were connected with giving up unnecessary work and increasing those operations the necessity of which was dictated by conditions of production. On the whole the amount of work carried out by the MTS not only did not decrease as compared with the preceding years, but, on the contrary, considerably increased. In 1956 the MTS in this collective farm did work amounting in terms of plowed land to 3,829 ha; the contract for 1957 foresaw carrying out of 4,651 ha. of work, while the work actually done amounted to 6,874 ha. Especially great was the increase in the volume of machine work in livestock breeding and construction work. This resulted in a considerable increase in feed production. In 1956 this collective farm prepared 650 tons of silage and 318 tons of hay; the corresponding figures for 1957 were 900 tons and 923 tons. As a result of strengthening of the feed base a further increase of cattle productivity took place. Milk yield per cow increased from 3,100 kg. in 1956 to 3,600 kg. in 1957.

More flexible utilization of machines brought a reduction of cost per unit of production. In 1956 for each labor-day spent in production of feeds 41 feed units were produced; in 1957—120 units. In 1957 this collective farm in fact mechanized all work of ensilage and sharply increased the mechanization of hay making. One labor-day with the help of machines (100% mechanization) produced 180 feed units in 1957, while one labor-day of hand work used to produce only 33 feed units.

The rise in the level of mechanization and the more rational utilization of machines reduced the need for additional labor power by half. Labor-days earned by workers brought from the outside were reduced from 5,589 in 1956 to 2,880 in 1957. All this shows that the transfer of tractors and other agricultural machines to the collective farm helped to raise the level of mechanization, first of all in cattle breeding and construction; that is, in the fields where the part played by the MTS had been very small.

The transfer of machines to the collective farm increased the machine operators' material interest in the results of their work. In the Pobeda collective farm on the average each worker of the tractor brigade earned in 1957 more labor-days than in 1956. One example: tractor driver Karulin earned 605 labor-days in 1956; in 1957—1,123 labor-days. Beside 9,000 rubles received in money Comrade Karulin earned more than two tons of grain, half a ton of hay, butter, etc.

The experience of the new relation between the MTS and the Pobeda collective farm shows that when machines are

transferred to a collective farm the state does not suffer any losses, because it gets its payments in kind. At the same time the functions of the MTS in such a case are limited to the repair of machines and control over the good care of machines.

With the transfer of MTS machines to the collective farms the necessity arises to find new organizational forms of machine utilization. In our opinion the chairman of the collective farm should have direct control over machines. There is no need to have the positions of a brigadier and an assistant brigadier of a tractor brigade. At the same time it is advisable to have in the collective farm a mechanic whose duty would be technical servicing of agricultural machines. It would also become possible to give up completely the existing cumbrous forms of reporting connected with the standard contract now in existence and, as a result, to carry out a corresponding reduction of the MTS personnel.

Thus, the experiment of transferring machines to the collective farms was a success. However, in emphasizing the positive role of the experiments of transferring MTS machines to collective farms it would be wrong to overestimate their importance. Lately a certain number of our agricultural economists perceived serious shortcomings in the system of relationships between the MTS and collective farms. Some comrades, however, speaking of the necessity of transferring MTS machines to the collective farms in order to do away with the shortcomings of that system, were up in arms against transfer of production means as the property of the collective farms, though at the same time they were ready to transfer them for the use of the collective farms.

We cannot agree with those who object to the sale of machines to the collective farms, who fear that this would strengthen kolkhoz property, and consider the transfer of machines for kolkhoz use as a final measure, quite sufficient to remove all shortcomings of the existing system of servicing collective farms. Kolkhoz property is collective, socialist property and its strengthening, accompanied by the rapid growth of all-national property, would only contribute to the growth of the productive forces of our agriculture. Because of that the best and the most radical solution of this question, undoubtedly, is giving to the collective farms the possibility of concentrating in their hands all the basic agricultural machines and using them in the interests of kolkhoz production, in the interests of the whole people.

At the same time, in our opinion, it would be a mistake to ignore the positive experience in the new relationships between the collective farms and the MTS amassed by our collective farms. The experiments of transferring machines for utilization by the collective farms are important in particular for the northwestern, western, and central regions of the country where for some time production-technical servicing will continue to be done by MTS. In these regions the collective farms cannot acquire the necessary machines at once and, what is even more important, cannot skillfully and efficiently utilize them. In view of this certain preparations are necessary for the transfer of MTS machines to the property of these economically weak collective farms.

While preserving the existing system of serving the economically weak collective farms by MTS, we should widely utilize the experiments of transferring machines for collective farm use and take into consideration the natural and economic peculiarities of the districts and of the collective farms. As experience shows, transfer of machines to the disposal of the collective farms makes it possible to cut down sharply the staff of the MTS even during the period of reorganization, because in this case the main functions of the MTS would, in fact, become repairs and control of the proper care of machines. Reduction of the MTS staffs, in turn, would make possible strengthening of the economically weak collective farms with experienced technically trained personnel and to reduce state expenditures per centner of products received as payments in kind.

Transfer of machines during the period of MTS reorganization for use by economically weak collective farms in those regions where the MTS will be temporarily preserved will help to strengthen economically weak collective farms, will help them to acquire experience in intelligent utilization of machines, and reduce state expenses for maintenance of the MTS apparatus; that is, such a transfer will create conditions for the MTS reorganization and sale of machines to these collective farms. Transfer of machines for use by the collective farms should be considered as a temporary measure the purpose of which is to prepare the reorganization of the MTS in the regions where collective farms are economically weak.

***

If the sale of MTS machines to the collective farms is not properly organized, it may result in strengthening some collective farms and in weakening others. The stronger among the collective farms, buying the machines they need, would have greater chances to buy better, more modern machines, while all that will be left for the economically weak collective farms will be less productive, obsolete machines. We believe that it would be better to give to each collective farm the right to buy first of all those machines which usually serve it, though this, of course, does not preclude redistribution of machines among the collective farms and even among districts. In connection with this we consider it necessary in the nearest future to conduct a mass study of applications of the collective farms which wish to buy needed machines. It is also necessary to find out in each region, in each district, which machines collective farms intend to buy in 1958 out of machines available in a given MTS, which machines collective farms would like to buy in case they obtain credits, which machines they plan to buy in the following years, which machines they wish to buy among those which are not available in the MTS, though produced by our industry and, finally, what in general, they want from industry. Such a survey may help to decide correctly questions connected with the reorganization of the MTS and at the same time will render great help to our plants producing agricultural machines in their planning of machine production for the next few years.

The sale of agricultural machines to the collective farms will be a serious test for the agricultural machine building industry. Important questions will arise before it, questions connected with the study of collective farm demand for machines and spare parts, because, undoubtedly, collective farms will buy only those machines which best of all correspond to their natural and economic conditions. In solving these questions economists and statisticians may be of great help. For example, in the Shakhovsk district the majority of the chairmen of collective farms intend to buy such tractors as the DT-54 and at the same time show little interest in the purchase of wheel tractors of low hp. capacity. Thus, the Pobeda collective farm decided to buy the following set of tools of production: six DT-54 tractors, one Belarus tractor, one 4-VARZ cultivator tractor, or a total, according to the MTS balance value, of 240,000 rubles worth of machines. In addition to that they wish to buy two C-6 combines, two C-4, one PR-2, four hay stacking machines, one silage combine, or a total of 203,000 rubles worth of harvesting machines. This collective farm also decided to buy two flax scutchers, one excavator, one hay ricking machine, and the necessary hinged and attached implements. The total value of machines which

the Pobeda collective farm intends to buy is 739,000 rubles.

At the same time the sale of machines to economically weak and even average collective farms should be made on an installment plan in three to five years depending upon their financial-economic situation. For example, the Pobeda collective farm may pay for the machines in one lump sum, but this would create serious financial difficulties, for it would prevent completion of the initiated construction, would make impossible payment of monthly advances to the members, purchase of materials necessary for the purchased machines and their servicing during the period of field work.

In deciding the question of the advisability of selling various machines to collective farms we must consider whether this or that machine can be productively used on a given collective farm. If the land area of a collective farm does not allow full utilization of this or that machine, it is better to leave it in the RTS and lease it out to collective farms for a fee. In a number of cases, presumably, it will be necessary to carry out a merger of small collective farms in order, on the one hand, to ensure more productive utilization of machines, and on the other—to make possible the new farm purchase of the needed machines. In just this way the question was solved in the Pobeda collective farm which recently merged with the Zhdanov collective farm. The merger of these two farms, carried out at the initiative of the members themselves, was dictated by the necessity of ensuring more productive utilization of machines under the new conditions when tractors and other agricultural machines will be transferred to the collective farm.

All this shows that the many-sided study of the natural and economic characteristics of individual farms is one of the basic conditions for the successful reorganization of the MTS. That reorganization will ensure a new upsurge of the economy of our collective farms, will help the growth of the social economy, and will be an important step on the road to communism.

M. Terentyev:

Some Questions of Agricultural Price Formation

Measures for the development of the kolkhoz regime and the reorganization of the MTS, outlined by the February plenum of the CC, CPSU, are of vital importance to the whole national economy of our country. Changes in the existing order of productive-technical servicing of the collective farms will be an important new step in the development of the kolkhoz regime, which has to ensure maximum use of the advantages of the socialist system of economy. The decisions of the plenum open broad vistas for continued growth and improvement of kolkhoz production.

The CP at all stages of socialist construction attached enormous importance to the organization of proper production ties of the city and village, in particular agricultural price policy. In the course of socialist construction, depending upon concrete economic and political conditions, various forms of procurement were applied and prices of agricultural products obtained by the state from the farms were changed.

The existing system of procurement of agricultural products from the collective farms was formed mainly in 1932-1933. At that time compulsory deliveries of the most important products at fixed prices were introduced, as well as payments in kind for the work done by the MTS. This system of procurement was applied to collective farms, subsidiary farms of the members and to individual peasants.

Compulsory deliveries of the most important agricultural products and payments in kind for the work done by the MTS were introduced as a result of economic and political conditions existing in that period. Unprecedentedly rapid growth of the urban population increased the demand for foodstuffs and agricultural raw materials. The collectivized economy of the collective farms at that time was in its first stage of development; as a result the level of production of the most important agricultural products lagged behind the needs of the rapidly growing urban population. The following data characterize the volume of the marketed products of the most important kinds of kolkhoz products between 1932 and 1957 (data in thousand tons):

	Delivered by collective farms to the state	
	1932	1957
Grain (million poods)	800	2,370 (1)
Cotton	1,162	3,780
Sugar beets	4,198	37,264
Meat	136	2,909
Milk	746	13,079
Wool	19	170

Compulsory deliveries of the most important kinds of agricultural products at fixed procurement prices and payments in kind for the work of the MTS ensured to the state the necessary amounts of foodstuffs and agricultural raw materials. The planned supply of cities and industrial centers with bread and other food products and of industry with raw materials was realized on this basis. Such a method of procurement of agricultural products, which ensured concentration in the hands of the state of centralized food resources, contributed to the strengthening of socialism in our country and, first of all, to the establishment in the shortest possible time of a powerful socialist industry.

In the following years the forms of procurement and the system of purchasing prices was improved: they stimulated fuller utilization of agricultural land in the collective farms and encouraged production of certain kinds of agricultural products. In 1940 the government introduced a new principle of compulsory deliveries by the collective farms of the most important agricultural products on the basis of total plowed land instead of on the basis of the planned sown area and the number of livestock. For a number of technical crops it added to the basic contractual price premiums to be paid above the fixed price; a system of supplying collective farms and their members with goods at especially low prices in case of successful deliveries of agricultural products to the state was widely applied.

It should be pointed out, however, that the delivery prices for the most important products of agriculture for compulsory deliveries to the state remained, in the main, unchanged up to 1955 (they remained approximately at the level of market prices prevailing in 1928). Yet during the same period the factory prices and retail prices of many goods produced by industry were considerably increased.

(1) Data for 1956.

Such a relation between factory and retail prices of industrial goods on the one hand and fixed prices for the products of agriculture on the other helped a forced development of heavy industry. However, these fixed prices of agricultural products at a certain stage began to hinder the development of agriculture, lowered the interest of the collective farms and their members in the increase of agricultural production, especially of grain and livestock, the procurement of which was carried out mainly in the form of compulsory deliveries to the state at low fixed prices. The value equivalent in exchange between the city and the village was to a certain degree violated. The September (1953) plenum of the Central Committee, CPSU, made a decision to change conditions of procurement of agricultural products: the rates of obligatory deliveries per ha. in the case of grain, meat, milk, potatoes, and some other products were lowered while state purchases of the same products at higher prices, more advantageous to the collective farms, were expanded.

Later the CC of the CPSU and the government carried out a number of measures increasing purchasing prices of agricultural products sold by collective farms and their members and the delivery prices for the products of the state farms. Increases in prices, aimed at bringing closer the fixed prices of compulsory deliveries and purchasing prices, became an important stimulus to increasing agricultural production. As a result of expansion of production and an increase of state procurement the monetary incomes of the collective farms received from the realization of their commodity production rose from 42.8 billion rubles in 1952 to 94.6 billion rubles in 1956. Contributions to the indivisible funds of the collective farms more than doubled, increasing from 7,408 million rubles in 1952 to 16,728 million rubles in 1956. Incomes of kolkhoz members from the kolkhoz and personal (subsidiary) economies increased in 1957 by 33%, as compared with 1953.

Important measures drafted by the Party and now in the process of realization aimed at the improvement of the procurement system for agricultural products and at increasing prices for compulsory deliveries, contributed greatly to the rapid improvement of agriculture. By comparison with the preceding four years production of grain in the last four years increased 27%, potatoes 14%, vegetables 39%, sugar beets 37%, flax fiber 91%, raw cotton 13%. The number of livestock increased as follows (in millions):

	Jan. 1, 1954	Jan. 1, 1958
Long-horned cattle	55.8	66.7
of which cows	25.2	31.4
Pigs	33.3	44.3
Sheep	99.8	120.1

As a result of the increase in numbers and productivity of livestock, production of meat increased 38% in the last four years and milk 50%. Production of other livestock products is also increasing.

The reorganization of the MTS and the change of methods of production-technical servicing of the collective farms sets a new historical stage for the development of the kolkhoz regime. It opens wide vistas for expanding agricultural production, lowering the cost of kolkhoz products and increasing labor productivity. This reorganization creates conditions for a reform of the existing system of procurement and prices for marketable products of the collective farms obtained by the state.

***

The existing system of procurement and prices for kolkhoz products has a number of defects. First of all it is too complex. The same products, produced in the same region, are obtained by the state through various forms of procurement at different prices. For example, collective farms deliver grain to the state as part of payment in kind for the work of the MTS; they deliver grain under the system of compulsory deliveries at prices which in some cases are below the expenses of production and, finally, they sell grain to the state at prices which for many regions are unjustifiably high. Approximately the same system of state procurement and prices exists for potatoes, meat, milk, wool, and other products. The collective farms deliver to the state marketable products of many technical crops in the form of payment in kind for the work of the MTS and according to contracts in which the same multiplicity of prices is observed: there is a basic, contractual price and there are premiums paid for the products delivered above the plan. In some branches, for example in flax production, the premiums are several times as high per unit of product as the basic contract price. Beside payment to the collective farms of the basic price plus premiums, some kinds of kolkhoz production are paid for in part with products of industry at specially low prices.

The same multiplicity of prices is applied to the products of industry sold to the collective farms. For example, mineral fertilizers are sold at prices which are the same for all agricultural enterprises as well as at specially low prices; machines and spare parts, fuel, construction materials are sold to the collective farms at prices which are higher than prices charged to other organizations.

The multiplicity of prices for the marketable portion of the kolkhoz products and differences in prices charged to the collective farms for products of industry create great difficulties in planning the national economy, make more complex the distribution of the national income, and necessitate additional unproductive expenses by the state for the maintenance of procurement organizations.

It is known that the larger the marketable part of production, the lower the expenses of production per unit of products and the lower its value and, consequently, the price. The existing system of purchasing prices for a number of agricultural products is in partial contradiction to this law of value. For example, in 1956 production of grain in eastern regions, where the cost of grain is the lowest in the country, was greatly increased. However, each centner of grain purchased by the state from the collective farms cost the state in 1956 much more than in the preceding years and than in 1957. This was the result of the automatic action of the existing system of procurement and prices for the marketed portion of the kolkhoz products. The amount of grain obtained by the state from the collective farms as compulsory deliveries and as payments in kind for the work of the MTS is determined by the fixed rates of the compulsory deliveries and the fixed rates of payments in kind. In view of this the increase of the marketed grain obtained by the state from the collective farms above this amount takes place mainly at state purchase prices which are higher, as a result of which the total cost of grain obtained is growing more rapidly than its quantity.

A similar situation appears in the procurement of other important products of agriculture as well as in respect to the products of technical crops to which a system of high premiums paid for products delivered above the plan is applied. Under these conditions the more flax, cotton, sugar beets etc. produced, the more the state pays per centner of procured goods.

In recent years some reduction in the cost of labor and means per unit of agricultural products was observed. For example, according to our calculations the cost of grain on

the collective farms was reduced in 1956 by 15% (as compared with 1953), of cotton by 12%, of flax fiber by 21%, of meat by 9%, of milk by 15%. Enormous as yet unutilized possibilities for the further lowering of costs are available at the collective farms. However, the existing practice of procurement and price formation stimulates the increase of production for the market in the collective farms but hardly encourages them to lower the costs.

Another important direction of improving the system of prices for kolkhoz products is connected with the problem of differential rent in the collective farms. It is known that there is in agriculture differential rent I, the result of differences in natural fertility and location. Those farms which have better natural conditions and are closer to industrial centers and cities receive an additional income which should be at the disposal of the whole society. The transfer of this income to the state may be realized through purchasing prices differentiated by zones in such a way that they take into consideration natural conditions of production and conditions of marketing kolkhoz products; the state may also realize this income through a tax system.

However the existing system of prices of agricultural products takes no account of the additional income obtained by collective farms which carry out production under better natural and climatic conditions or are better situated in respect to marketing their commodity production. On the contrary, through the system of rather high purchasing prices as well as high premiums for the deliveries to the state of the products of technical crops above the plan the incomes of such collective farms are rapidly growing. The state pays the highest prices per centner of products to those collective farms which, through high fertility of land and favorable climatic conditions, produce more products, and can sell a large part of them at high state purchasing prices and obtain premiums. The same farms, as a rule, also sell more products at kolkhoz market prices.

Of course, an increase in collective farm production depends not only upon natural conditions, but also upon the skillful management of their economy. Yet, in spite of the fact that the natural and economic conditions on the collective farms, for example, of the Krasnodar region, are much better than on the collective farms of the Smolensk region, the collective farms of the Smolensk region are paid for one centner of grain delivered as part of the compulsory deliveries or sold to the state in 1956 not much more than what is paid to the collective farms in the Krasnodar region, or half as much as the collective farms of the Altai region are paid on the average.

Under the existing system of procurement and prices the differential rent I was taken and redistributed mainly through the rate of payments in kind for the work done by the MTS. For example, in the Krasnodar region the cost of one ha. of plowing by the MTS was 28 rubles in 1956, but the collective farms delivered 1.5 centners of grain per ha. for this work. In the Smolensk region, on the contrary, the actual cost of one ha. of plowing for the MTS was considerably more, but the collective farms of that region delivered to the MTS only 35 kg. of grain for plowing one ha.

Now, when the machines of the MTS are sold to the collective farms and when the collective farms themselves carry the expenses of using the machine-tractor fleet, evidently, there will be no need for payments in kind and thus the now functioning mechanism redistributing the differential rent will cease to exist. Because of this it is necessary in the solution of the question of how to improve further the procurement prices of kolkhoz products to find a way for the redistribution of the additional income of the collective farms, obtained because of the existence of differential rent.

In improving the system of prices it is also necessary to increase prices of grain and oil seeds for collective farms which are a distance from the railroad points and river wharves of the grain procurement agencies. Now these collective farms receive the same price for their grain as the collective farms located near the agency's points, though the former have to undergo additional expenses of transportation.

With the increase of procurement prices, the expansion of state purchases, the introduction of relatively high premiums for technical crops and the increase in the volume of MTS work done on the collective farms, the expenses of the state for the procurement of agricultural products have sharply increased. The reorganization of the MTS makes possible the establishment of uniform, economically justifiable prices (though differentiated by zones) for all products of agriculture. In our opinion the establishment of such a system of prices should not involve an increase in the expenses of the state for the procurement of agricultural products.

***

In a planned socialist society the formation of prices is a complex problem. The economic relations of industry and agriculture, city and village, working class and kolkhoz peasantry are reflected in prices.

For the state prices are one of the most important levers of redistribution of the national income among the branches of the national economy, between funds of consumption and funds of accumulation. A proper price policy helps to raise the standard of living of the Soviet people and strengthen the purchasing power of the ruble. In prices serious economic and political problems cross each other. A proper, theoretically correct solution of the problem of price formation on the products of agriculture, especially on the portion marketed by the collective farms, is of tremendous importance not only for this branch, but for the whole national economy.

Prices on kolkhoz products which are not economically justified have a harmful influence on the corresponding branch of agriculture, they result in lowering the material interest of the collective farms and their members in the increase of agricultural production or cause excessive state expenditures for the procurement of certain products. In the collective farms producing goods for which unjustifiably high prices are established, the economy is usually developed onesidedly. On the one hand, with such prices the socialist principle of payment according to labor is violated and part of the labor of society is going to pay for the labor of members of these collective farms. On the other hand, even necessary labor is not paid fully on the collective farms producing products whose prices are established at an unjustifiably low level, so that they do not reimburse even socially necessary expenses of production. It is true, collective farms may market some of the products at kolkhoz market prices and in this way obtain additional income, but this may be done only by collective farms located near such markets. Moreover an orientation of the farm toward the kolkhoz market prevents the proper development of the social economy of the farm.

In the case of unjustifiably high purchase prices the state has to undergo additional expenses, while those collective farms whose products are priced too low need credits and other forms of state help and frequently the indebtedness of such farms to the state has to be written off.

In determining the prices of marketable products which the state obtains from the collective farms it is necessary first of all to follow the law of value. Collective farms through prices have to reimburse themselves for the socially necessary expenses of production and obtain a net income

needed for the expansion of production and the satisfaction of the social and cultural needs of the members. However this does not mean that the price should fully coincide with the value of kolkhoz products. For a number of reasons the purchasing price should be below the value. First of all, a certain part of the value of kolkhoz products consists of state expenses. Hydromeliorative work, education and upkeep of specialists, agro-veterinarian and other measures are financed by the state. Moreover the state brings kolkhoz marketable products to the consumer, maintains the procurement apparatus, etc. All these additional expenses of the state should be covered by a portion of the value created in kolkhoz production. Second, a portion of the surplus product, created by the labor of kolkhoz members for society, should satisfy all-national needs. It is clear that these two portions should not be reimbursed in the procurement price. Consequently the procurement price should be lower than the value of the kolkhoz product, but not lower than the average socially necessary expenses of production of such products.

In order to arrive at an economically justifiable procurement price it is necessary to determine the necessary level of expenses of production per unit of product by zones of the country and the rate of the net income realized by collective farms. In recent years great work was done in calculating socially necessary expenses of production on the collective farms. For example, a group of scientists of the Council for the Study of the Productive Forces—CSPF [in Russian SOPS]—at the USSR Academy of Sciences, made an attempt to determine the size of expenditures of living and past labor per unit of various kinds of products by natural-economic zones of the country. Valuable materials on this problem have been accumulated by several research institutes, in the CSA of the USSR, and in planning and agricultural organs. In determining the level of socially necessary expenditures of production our starting point should be an average level of expenditures of labor and means for production of one unit of product and not the size of the gross income. As a rule, expenditures per unit of product calculated on the basis of gross income of the best collective farms are higher than of those lagging behind.

In our opinion some economists make a mistake by recommending the determination of prices of agricultural products according to conditions of production on the worst plots. This Marxist statement is correct for capitalist conditions of production under private property in land where prices on agricultural products are formed spontaneously; but it has lost its importance for a planned socialist society. In a socialist society price is a category of the planned economy and one of the most important levers in the hands of the state. Under these conditions, in our opinion, prices of agricultural products should be formed with due consideration paid to the average level of expenses of production in this or that region of the country.

Some economists consider it difficult or even impossible to determine correctly the expenses of production on the collective farms so long as they acquire machines, implements, and industrial goods for the purposes of production from industry at prices which are below values. On the one hand this is correct. Expenses of production of the collective farms calculated on the basis of state prices for machines, purchased implements, and materials will always be below value. However, as we try to determine the level of expenses in order to find out economically justifiable procurement prices for kolkhoz products, we believe that this lack of precision in calculating expenses is of no great importance. Procurement prices under these conditions will be lower than value by the same amount that the state is not reimbursed in its selling prices of machines, implements and other industrial materials purchased by collective farms.

Through procurement prices the collective farms should realize a certain part of the value of the surplus product created by the collective farms. Lately collective farms, guided by the agricultural artel statute, appropriated for indivisible funds, circulating funds, obligatory payments to the state, and utilities and cultural and social needs about 32% of their monetary income. This included charges for depreciation of the basic means of production. Without charges for depreciation collective farm allotments for the development of the farm and for state obligatory payments would be somewhat lower. Under new conditions when collective farms buy tractors, agricultural machines, and other technical means at their own expense, appropriations should be increased and take, on the average, from 30 or 35% of the monetary income; on the best collective farms appropriations for farm development and for utilities and cultural construction may be considerably higher.

Thus the collective farms will receive a price for the products delivered to the state in which the part of the net income will be no less than 30 or 35%. We have to keep in mind, however, that collective farms expand their production not only through the use of money, but also through an increase of natural funds: an increase in the number of their productive livestock, building up and expansion of seed and feed funds carried over from year to year, etc.

In our opinion it would be wrong in establishing state purchasing prices to aim at the same rate of net income obtained from the production of every agricultural product in all regions of the country. For the collective farms of Siberia, Kazakhstan, Trans-Volga, and other regions of the country which are the basic suppliers of grain, procurement prices of grain should be most advantageous. For the collective farms of Middle Asia the most advantageous prices should be established for cotton, while for the collective farms of the non-black earth zone (including the Baltic republics and the Belorussian SSR)—for pork, milk, flax products, and potatoes.

One of the most important problems in establishing a system of prices of agricultural products is the proper relation of prices of certain types of products. For the majority of the regions, the leading branch of farm economy determining the successful development of all agricultural production is grain production, so it is necessary first of all to establish economically justifiable procurement prices for grain. The level of grain prices in the key producing regions of marketable grain should serve as a criterion for determining purchasing prices of other products. The price of cotton should serve as a criterion in cotton-raising regions.

Planning economically justifiable procurement prices will help specialization of agricultural production in those regions where cost is lower, in this way contributing to a sharp increase in the production of foodstuffs and raw materials and to lowering costs per unit of product for the country as a whole.

The ratio of procurement prices of grain, potatoes, technical crops and livestock products should correspond to the ratio of expenditures of labor and expenses of their production. The existing ratios of procurement prices for the most important products of kolkhoz production require substantial corrections, as shown in the table on the following page.

These data show that the level of prices for grain, meat and milk is lower than for other kinds of agricultural products. In the main regions raising technical crops the procurement prices and contractual prices of these crops together with premiums cover relatively high collective farm

expenditures and make it possible to form corresponding accumulations, while in a number of regions the prices of grain do not cover the full expenditures of the collective farms. This creates unequal economic conditions for the collective farms and their members in different zones of our country. Many collective farms in the zones of intensive production of a number of technical crops receive unjustifiably high incomes.

An improper level of prices for certain products of agriculture delays the development of corresponding branches on a farm having many branches. For example, one of the causes of delay in the growth of meat production is an unjustifiable price ratio for grain, feed, potatoes and meat. At the existing ratios it is more advantageous to the collective farms to deliver grain or potatoes to the state than to feed them to the livestock. Expenses of the collective farms in feed alone for the production of one kg. of pork amount to 4.8 rubles, while the state purchasing price of one kg. of pork is seven rubles. Again, under existing prices it is unprofitable to feed potatoes to pigs. In order to get an increase of one kg. of live weight in a pig it is necessary to feed it 16 kg. of potatoes. This amount of potatoes (at the state purchasing price) is worth 8.48 rubles. Thus the collective farms raising pigs would not cover even the cost of the feed.

Of great economic importance is the proper differentiation of prices by zones in our country. In the levels of production costs for grain, potatoes, sugar beets, meat, and milk in various zones of our country there are considerable differences, while the level of the state procurement and purchasing prices in various zones is almost the same. For example, the cost of grain on the collective farms of the Krasnodar region is 54% of the average level of cost for the whole Union while the procurement price is 100% of the average level and the state purchasing price—106%. In the Latvian SSR and in the Gorky region the cost of grain is 200% of the all-Union level, while in the White Russian SSR and the Vologda region—it is almost 300%; but the state purchasing price of grain for these regions is the same as for the Krasnodar region, while the procurement price is only 20% higher than in the Krasnodar region. It is quite evident that in the Latvian SSR, the Gorky region, the White Russian SSR and especially in the Vologda region, as well as in various other northwestern regions, not only the procurement, but also the purchasing prices of grain at the present level of production are below the expenditures of the collective farms.

Correct procurement prices, which take into consideration the law of value, would be a powerful factor in helping the rational geographic distribution of branches of agriculture and its specialization according to zones.

Ratios of Prices, Expenditure of Labor and the Costs of Various Products (as % of the Corresponding Data for Grain)

	Average prices received	Expenditure of labor, 4 years avg. (1953-1956)	Costs, 4-yrs. avg. (1953-1956)
Grain	100	100	100
Potatoes	88	54	51
Cotton	476	436	291
Sugar beets	50	36	23
Sunflowers	195	86	66
Milk	191	300	228

L. Zlomanov:

Experience of a Collective Farm Tractor Brigade

The decision of the February plenum of the CC, CPSU, and the theses of Comrade N. S. Khrushchev's report "Concerning the further development of the kolkhoz regime and reorganization of the MTS" show that a new stage has been reached in the development of socialist agriculture.

The concentration on the collective farms of all the basic means of production will make it possible to go deeper in the search for and discovery of fuller reserves for increasing labor productivity, and utilizing land most efficiently. In the final account this should considerably increase the gross and marketable product of the collective farms and contribute to further growth of the material welfare of all toilers.

The monetary incomes of many collective farms are several times as high as the value of the basic means of the MTS. For example, monetary incomes of the collective farms in the Chkalov and Gorodetsk flax-raising districts, Gorky region, are more than three times as large as the balance value of the basic means of the MTS serving these collective farms. If in determining the value of the machines we take into consideration their wear and tear, the difference will be even more pronounced. The annual monetary income of such collective farms in these districts as Timiryazev, Avangard, Progress and others in the last few years has exceeded three or four million rubles, or fifteen times the value of the production means of the MTS tractor brigades. At the same time in the Chkalov district four collective farms had monetary incomes in 1956 amounting to only 0.5 million rubles for each of them. Consequently even in the sphere of action of the same MTS the question of sale of tractors and machines to the collective farms requires an individual approach to each farm. The best collective farms can pay the cost of the necessary machines in one year, but the economically weak collective farms need several years.

With the purchase of tractors and machines by collective farms the problem is to find organizational forms which will ensure the best utilization of the machine-tractor fleet. From this point of view an analysis of the experience of a kolkhoz tractor brigade at work is of special interest. The useful experience in the organization of tractor brigade work accumulated in the MTS, as well as the experience of the joint work of tractor and field brigades in a number of collective farms should be studied by the collective farms: it will help them to overcome many organizational difficulties.

The experience of utilizing its own tractors, united in an independent tractor brigade in the Avangard collective farm, one of the best in the Chkalov district, Gorky region, is in that respect of considerable interest.

The Avangard collective farm is a large farm with many subfarms working under conditions of the non-black earth zone. Its basic specialization is production of flax and livestock breeding. This collective farm has 1,511 ha. of land of which 1,311 ha. are plowed land. It has 14 trucks, 90 electric motors, and 13 various subsidiary enterprises. Its monetary income in the last four years rose from 2.2 million to 4.8 million rubles. Avangard has been a participant of the All-Union Agricultural Exposition since its establishment.

The growth of its gross and marketable livestock products is characterized by the following data:

	1954		1955		1956		1957		1957 as % of 1954	
	Gr*	Ma*	Gr	Ma	Gr	Ma	Gr	Ma	Gr	Ma
Milk (thousand liters)	180.0	111.9	228.4	79.9	291.0	206.0	389.8	209.6	217	187
Meat (centners)	620.0	400.3	852.0	610.0	798.0	585.0	906.0	686.0	146	171
Eggs (thousands)	75.4	70.0	90.6	86.0	124.5	112.2	202.0	195.0	268	279

* Gr — Gross production; Ma — Marketable production

In 1957 this collective farm obtained on the average 3,013 liters of milk per cow and 157 eggs per egg-laying hen. From year to year gross harvests and yields of basic crops are increasing. For example, the average yield of cereals was 9.19 centners per ha. in 1954, 13.6 centners in 1956 and 17.6 centners in 1957. The corresponding figures for fiber flax were 3.36, 4.7, and 9.5 centners; for flax seeds— 3.1, 5.3 and 6.0 centners; for potatoes 151, 215, and 154 centners.

The high level of development of the kolkhoz's social economy and the availability of trained personnel made possible the organization of its own tractor brigade. In 1955 collective farms were allowed to purchase new KhTZ-7 tractors of 8.5 hp. The cost of these tractors was to be repaid with livestock products.

In the same year Avangard used this opportunity and bought two KhTZ-7 tractors. Expenses for the purchase of each tractor and a full set of machines for it amounted to 29,826 rubles of which the tractor cost 24,907 rubles, suspended plow 472 rubles, a mower 1,032 rubles, a schleife 850 rubles, and a disk seeder 2,565 rubles. In 1956 in exchange for livestock products the collective farm obtained two new DT-14 diesel tractors with a set of machines and implements and in 1957 another tractor. To this the collective farm added two semi-diesel Lants-Bulldog tractors, 10 hp. each, which had undergone capital repairs, and a tow tractor, made on the farm out of a GAZ-AA truck. Thus the tractor brigade now has seven tractors. Up to the last moment the collective farm was also served by a tractor brigade of the MTS under contract and this, of course, influenced the degree of utilization of the kolkhoz's own tractors and the kinds of work carried out by them.

***

It should be noted that the organization of labor in the tractor brigade of the collective farm was different from that of the tractor brigade of the MTS. Each tractor had its own tractor driver from among the members of the farm. Operative management of the tractor brigade was carried out by the chief agronomist of the collective farm. He determined the kind and place of work, the time needed for it, agro-technical conditions, etc. Actual management of the brigade and the calculations of the work done was carried out by the brigadier of the tractor brigade. Among his functions were the preparation of charts of machine servicing, guidance of such servicing, supervision of the repair work, calculation of the work done by tractors and of the labor-days earned by tractor drivers. This arrangement removed parallelism in the guidance of the brigade. Furthermore, in the tractor brigade of the collective farm there were no positions of assistant brigadier and of timekeeper (and, judging by four years of experience, the elimination of such positions has no unfavorable results for the operations of the brigade) as well as permanent workers hitching machines to the tractors. The main machines of the new tractors in this collective farm are suspended. For the tractor work on which attachable machines are used (they are carried out with Lants-Bulldog and other tractors) the attachers are sent from the field brigade according to need.

Closely related to the organization of labor are technical standards and the system of payment for work.

The standards of output per man and the labor-days assigned for the tractor work in the kolkhoz tractor brigade in 1957 were as follows:

	Standard (in ha.)	Number of labor-days assigned for one ha. of work
Plowing of plowed land	2.0	1.0
Harrowing	10.0	0.20
Cultivation	6.0	0.35
Disking with a narrow harrow	3.5	0.40
Disking with wide harrow	4.0	0.35
Sowing with disk seeder	4.0	0.45
Mowing of perennials	5.0	0.40
Potato planting	1.7	1.25
Plowing of clover field	1.8	1.2

Kolkhoz tractors are widely used for transporting timber and firewood and for each cubic meter of transported timber or firewood the tractor driver is given from 0.5 to 0.6 labor-days. For fulfilling the standard the kolkhoz tractor drivers are given on the average two labor-days, or half as much as is given to the tractor drivers of the MTS; yet they are paid at the highest rate established in the Avangard collective farm.

There is no guaranteed minimum of payments for the kolkhoz tractor drivers; for the labor-days earned by them they are paid in the same way as all other members of the farm. There is also no additional money payment to the drivers. One would expect that all this would lower their interest in the results of their work. But this is not the case. For example, in 1955 each of the tractor drivers who drove a KhTZ-7 received in terms of money from 11,000 to 12,000 rubles. In 1956, because of the lower yield of flax (natural conditions were unfavorable in that year) the average money earnings were about 5,000 rubles for each of the six tractor drivers. Tractor drivers are also widely used by the collective farm in various work not connected with the work of the tractors. As a result of this their annual earnings are increased by 30 to 40 per cent. Thus the material interest in the results of their work is obtained in the collective farm not through an increase in the number of labor-days of tractor drivers, but, on the contrary, through a judicious use of their labor. Absence of the guaranteed minimum actually leads to an increase of their interest in the good quality of work, because on this depends the size of

the kolkhoz income and, consequently, the size of payment per labor-day.

The additional payment is given only for the work spent in flax raising, in which case the tractor driver gets average additional earnings of the best member of the "link" and the brigadier of the tractor brigade—average additional earnings of the brigadier of a field brigade. This is due to the fact that raising flax is the main source of the kolkhoz's income and good quality of work of flax raising is especially important.

The earnings of the brigadier of the tractor brigade are fixed at 20% of the number of labor-days earned by all tractor drivers. There is no additional payments for the length of service, experience, work without assistant, etc. In 1956, for example, the brigadier of the tractor brigade earned 522.7 days or 74% more than an average able-bodied kolkhoz member, though in this collective farm there were practically no cases when members would not fulfill the obligatory minimum of labor-days without valid reasons. When attachers are used, they receive 80% of the labor-days earned by tractor-driver (in the MTS they receive 75%). For the work inside the collective farm for which no standards are available they are paid by the hour. For one hour of work a tractor driver is given 0.2 labor-days, the attacher—0.16 labor-days.

This independent tractor brigade had been organized on the collective farm for the first time and, naturally, the organization and the system of payments for labor were not perfect. Every year the kolkhoz board examines the experience of the work of the brigade and makes changes in the organization of work and the system of payments. In connection with this it is necessary to examine some unsolved questions of labor organization in the brigade.

In the tractor brigade of the collective farm no material stimuli are used for saving fuel and spare parts. The board considers that tractor drivers spend fuel intelligently and that encouraging saving of fuel may result in deterioration of the quality of work. Yet on the MTS KhTZ-7 tractors use per ha. of plowed land only two-thirds of the gasoline spent on the collective farm. In respect to repairs an opinion prevails that their cost does not depend upon the tractor drivers. As a result the actual expenses of repair by types and trade marks of tractors are not recorded and even for all tractors such expenses are recorded unsatisfactorily. This means that in fact the experience of the MTS tractor brigades where cost accounting is applied is not utilized by the tractor brigade of the collective farm. Yet they should not neglect this experience, because the application of the principles of cost accounting in the work of many MTS resulted in a considerable economy of means without deterioration of the quality of work. The collective farm is also not using coefficients for converting the work in terms of ha. of plowed land, as a result of which various operations of the tractor brigade are not expressed in the same measure. Yet the use of the index of ha. of plowed land as an indirect index of the efficient utilization of machines demonstrated its worth in the MTS and there is no reason why it should not be applied on the collective farm, especially in view of the fact that the tractor fleet of the collective farm will grow.

	1955	1956	1957
The work done by the 15-h.p. tractor:			
On the collective farm	385	413	415
In the MTS	490	482	393

Utilization of the machine-tractor fleet in the collective farm was characterized by the data in the preceding table (in terms of ha. of plowed land per 15-hp. tractor).

These data show that, unlike the MTS, there is a continuous improvement in the use of tractors in the collective farm. Here it must be noted that the Chkalovsk MTS, in whose zone of operations the Avangard collective farm is located, is one of the best in the region and has been a participant in the All-Union Agricultural Exposition for years. The advantages of kolkhoz ownership of tractors may also be seen in the comparison of the work of tractors in the collective farm and the MTS by tractor trade marks. The productivity of the KhTZ-7 tractor on the collective farm was 11% higher than in the MTS in 1955, in 1956 36%, and in 1957 72%.

In the three years (1955-1957) the volume of work carried out by the tractor brigade of the collective farm increased 62%, while the volume of work carried out by the MTS brigade decreased 29%. In 1957 the kolkhoz tractor brigade carried out work amounting to plowing 1,752 ha. (in terms of plowed land), and the MTS tractor brigade—only 1,000 ha. This means that the larger part of tractor work was done by the tractors of the collective farm. Utilization of the machine-tractor fleet by the collective farm and by the MTS tractor brigade may be characterized by the data on the following page concerning the structure of the work done (in %).

These data show that the MTS carried out mainly work demanding much labor in the tilling of land (the autumnal plowing, plowing of the fallow land, cultivation, etc.). Before 1957 the collective farm had utilized the MTS tractors also for the work of transportation; but in view of the high rates of payments in kind for this work it began to carry it out exclusively with its own tractors. The tractor fleet of the collective farm was used for hauling building materials, manure, peat, and fuel, as a result of which the kolkhoz tractors worked almost the year round.

In order to determine how many machines a collective farm will buy, one should, beside the economic situation of the farm and its specialization, consider also the needs of the farm in work of mechanization. For example, at the existing level of mechanization in the Avangard collective farm it needs annually work by machines equal to plowing from 2,700 to 2,800 ha. (in terms of plowed land). The MTS tractor brigade, which served the collective farm, had three DT-54 tractors, one Universal and one CHTZ tractor. For strengthening its tractor brigade the collective farm would need to buy only two tractors: one DT-54 tractor for mechanization of the work in the basic cultivation of the soil and one tractor cultivator for those plants which need cultivation. With these tractors the collective farm will be able to achieve the work of plowing 3.5 ha. (in terms of plowed land) per ha. (including in this amount the work of the first stage of flax processing). This is not enough for the collective farms specializing in the production of flax. But the question cannot be solved only by buying an additional number of tractors and machines of the available types. What is necessary is the designing of new types of machines which will fit the concrete needs of the collective farms. A system of advance orders to the industrial plants for new machines will be of great importance in that respect.

***

The generalized economic characteristics of tractor and machine use is the cost of work per unit of work. The cost of tractor work per unit of work in the collective farms to a considerable degree depends upon the level of payments for a labor-day in a given year. In determining the cost of plowing one ha. of plowed land in the Avangard collective farm we used the actual payments in the kolkhoz per labor-

The tractor brigade of the collective farm			The tractor brigade of the MTS		
Kind of work	1956	1957	Kind of work	1956	1957
Plowing	23.7	24.5	Plowing	56.2	50.0
Work of transportation	29.2	40.9	Work of transportation	13.7	—
Hay mowing	9.7	10.4	Cultivation	11.4	8.1
Cultivation	6.0	8.0	Sowing of cereals	4.5	7.3
Harvesting of cereals	6.0	4.6	Harvesting of cereals and seed grass plots	—	8.8
Disking	8.7	—	Disking	7.5	—
Others	16.7	11.6	Others	6.7	25.8
Total	100.0	100.0	Total	100.0	100.0

day in money. The total amount of labor-days, beside the labor-days earned by tractor drivers and attachers, also includes labor-days earned by the brigadier and labor-days spent on carrying out current repairs. In 1955, money remuneration for one labor-day amounted to 15.2 rubles; in 1956, to 7.31 rubles; in 1957, to 11.25 rubles. The number of labor-days correspondingly amounted to 3,100, 4,426, and 2,655. The cost of repair materials was determined approximately, because the collective farm held no exact records of them. The cost of fuel and lubricants was determined on the basis of actual data for their expenditures by the tractor brigade. The total value of these materials was determined on the basis of prices charged by the state to the collective farms in 1955: 1.1 rubles per liter of gasoline, an average of .85 rubles per liter of diesel fuel, and 2.00 rubles per kg. of lubricants. The sum of management expenses was determined as a certain portion of the total amount of labor-days of the tractor brigade. As a result we obtained the following data of expenses for work carried out by the tractors of the Avangard collective farm:

	1955			1956			1957		
Kinds of expenses	Total in rb.	Per ha. of plowed land in rb.	% of the total	Total in rb.	Per ha. of plowed land in rb.	% of the total	Total in rb.	Per ha. of plowed land in rb.	% of the total
Payments for the labor-days	47,574	50.50	59.0	30,795	21.10	42.5	30,100	17.20	41.5
Cost of spare parts and repair materials	10,000	10.60	12.4	12,000	8.20	16.5	13,000	7.40	17.9
Fuel and lubricants	20,588	21.80	25.5	24,990	17.20	34.6	28,000	16.00	38.7
Adm.-management expenses	2,500	2.60	3.0	4,500	3.20	6.4	1,050	0.80	1.9
Total	80,662	85.50	100.0	72,285	49.70	100.0	72,150	41.40	100.0

In order to ensure comparability of the data thus obtained with the data calculated according to the methods used in calculating the cost of tractor work in the MTS, we did not include depreciation of tractors and agricultural machines on the collective farms. The results show that the cost of plowing a ha. (in terms of plowed land) in the tractor brigade of the MTS amounted to 40.12 rubles in 1955 and 36.72 rubles in 1956. It may appear that in 1955 the cost of work done by the MTS was 53% and in 1956 26% smaller than the cost of the work done by the kolkhoz tractors. But in reality just the reverse was true. First of all, prices charged to the MTS for fuel and lubricants were less than half those charged to the collective farm. If we use in our calculations the same prices as those charged to the MTS, the cost per ha. of plowed land to the collective farm would not be 49.70 rubles, but only 39.50 rubles, or only seven per cent higher than charged to the MTS. Second, in the kolkhoz tractor brigade the work was done only by tractors of small hp. capacity; their productivity was much smaller than those used by the MTS; moreover, because of the existence of the contract with the MTS the collective farm did not use its own tractors on basic field work. Third, payments in money and in kind for labor-days earned by the members of the tractor brigade on the collective farm do not enter into the cost of the tractor work done by the MTS. It also does not contain the cost of the guaranteed minimum of grain supplied to the MTS workers.

There is another method of determining the relative effectiveness of state and kolkhoz tractors. It is based on determining the expenditures of the collective farm for the work done with its own tractors with payments for work carried out by the tractor brigade of the MTS. The collective farm does not compare the cost of work of its own tractors with that of the MTS tractors. For it, it is important only to know the difference in payment to the MTS tractor brigade per ha. of plowed land and the cost per unit of work carried out by its own tractors. For the work done by the MTS the collective farm pays in money and in kind and also gives labor-days to the workers of the tractor brigade. All this, together with the cost of hauling payments in kind and the cost of transporting fuel to the collective farm, represents expenses of the collective farm in payment for the work done by the MTS.

In accordance with this the expenditures of the Avangard collective farm in payment for the work done by the MTS in 1957 were as follows: payment in kind of 220 centners of grain—24,000 rubles; 153 centners of potatoes—8,100 rubles; 42 centners of vegetables—2,940 rubles; 29 centners of flax fiber—58,000 rubles; the cost of labor-days of the MTS brigade—16,900 rubles; hauling of payments in kind and bringing fuel to the collective farm—250 rubles; a total of 110,290 rubles, which means that the expenses of the collective farm for payments to the MTS per ha. of plowed land amounted to 110,290 rubles divided by 2,058, or to 55.1 rubles. The total volume of the work done by the MTS on this collective farm also included the work of improving meadows. Thus, the expenses of work with their own tractors cost the collective farm 25% less than the work done by the MTS per ha. of plowed land. In calculating the value of payments in kind we used the purchase prices of the state. If we used prices of the kolkhoz market, the difference would be even greater.

Thus the purchase of tractors by the collective farms will be an economically effective measure even in cases when the MTS render no material-technical help to the tractor brigades of the collective farms. If the repair of the tractors were carried out not on the collective farm but at the RTS, which would have all the necessary equipment for doing a good repair job, the economic effectiveness of the work of the kolkhoz tractor brigades would be even higher.

The experience of work with its own tractor brigade in the Avangard collective farm shows not only the necessity for progressive farms to purchase modern agricultural machines, but also the possibility of using them better than the MTS. At the same time the experience of this tractor brigade cannot be mechanically applied to the work of other collective farms. The experience of progressive farms should be applied only after considering the concrete conditions of each farm. It is possible that in a number of cases better methods of organization in the use of the kolkhoz tractors will be found.

I. Gaidukevich:

Collective Farm Purchase Procedure for Agriculture Machines

In the decision of the February plenum of the CC, CPSU, a timely and proper question was raised, the question of further development of the kolkhoz regime and the reorganization of the MTS. The MTS at the present stage of development of agriculture have fulfilled their basic functions and exhausted their possibilities in rendering agricultural-technical assistance to the economically strong agricultural artels. The majority of the collective farms have now become strong organizationally and economically, their production has increased, and they proceed with assurance along the road of a further steep rise of production.

The theses of Comrade N. S. Khrushchev's report show that the reorganization of the MTS is dictated by objective necessity, by the whole practice of building collective farms at this stage of the development of our country. The realization of the proposed measures will give full scope to the development of the productive forces in agriculture and will ensure abundance of agricultural products for the people's consumption and of raw materials for industry.

In the past year a transition to the new, improved forms of management in industry and construction—through economic councils—and an expansion of the rights of the Union republics was successfully carried out. This made it possible to use more fully reserves in industry, raw materials, and the labor resources of our country, and to raise the initiative and activity of the broad masses of toilers by drawing them into the guidance of socialist construction.

The reorganization of the MTS, in fact, is a continuation of the improvement of the managerial organization as applied to agricultural production; its purpose is to ensure fuller utilization of the reserves latent in kolkhoz production, to help to develop by all means the initiative and activity of the kolkhoz members and to enhance the role of the chairman of the collective farm: in reality he is a director of a many-sided agricultural enterprise.

The sale of agricultural machines to the collective farms will help to develop further and expand commodity-money relations in our socialist economy. It will be one of the most important conditions for carrying out the program outlined by the Party of further strengthening the growth of the material-production basis of communism.

The Communist Party and the Soviet government in the last four years worked out and realized most important measures directed at the rapid rise of agriculture. After the October (1953) plenum of the CC, CPSU, really remarkable successes were obtained in the growth of social production on the collective farms.

In a relatively short time a tremendous number of new machines were transferred to agriculture and serious measures were taken for organizational-economic strengthening of the collective farms. A larger number of experienced workers selected by the kolkhoz chairmen, as well as of trained agricultural specialists and of machine operators, were sent to the collective farms.

As a result of carrying out these measures the number of productive livestock and poultry on the collective farms has sharply increased, the land area has begun to be utilized more intensively, the productivity of labor has increased and the volume of agricultural commodity production has been considerably increased. Having supported the initiative of the best collective farms and state farms, the toilers of socialist agriculture developed a mass movement for catching up with the United States in the next few years in the per capita production of meat, milk, and butter.

Because of the considerable expansion of the sown area under grains, feed, and technical crops, as well as the growth of livestock productivity in the collective farms, the incomes of the farms and the personal incomes of their members have sharply increased. For example, money incomes of the collective farms in 1956 increased approximately three times by comparison with 1950. The increase of money incomes of the collective farms ensures expanded reproduction, qualitative changes, and renovation of the basic means of production through the growth of the annual money appropriations for the indivisible funds of the collective farms. This makes it possible for the collective farms to increase continuously the scale of new construction, to restore worn-out basic means of production and to acquire motor transport means, necessary equipment, and agricultural implements and machines.

An analysis of the available figures shows that the rapidly growing kolkhoz basic means go into the purchase by the farms of machines and implements which ensure mechanization of labor processes in livestock breeding and field

work, such as prime movers, various implements, agricultural machines, transportation means, etc. For example, the value of agricultural machines, transport means, and all kinds of equipment and installations, as well as implements on the collective farms, compared with 1940, increased 4.9 times in 1957 (the increase of transport means, included in the above, was five times, of implements and equipment—5.5 times) which shows a considerable growth of capital investments per kolkhoz member.

True, the available mechanisms, installations and equipment are not always used by the collective farms at full capacity. As a result return of the means expended upon them is proceeding slower than it should and this, to a certain degree, slows down the growth of kolkhoz incomes.

In the formation of indivisible funds, beside the kolkhoz's own monetary means, an important part is played by long-term credits opened to them by the state through the Agricultural Bank. In spite of tremendous growth of capital investments achieved by the collective farms, the part of long-term borrowing in their investments increased from 15.8% in 1940 to 25.4% in 1956. Yet the capital investments of the collective farms during such a short period as from 1954 to 1956 increased 2.9 times, which means that they grew more rapidly than the monetary incomes of the farms.

The unprecedented development of capital construction in the collective farms was made possible through an increase of credits opened to them by the Soviet state, especially in recent years. For example, in 1954 collective farms obtained 4.9 times as many long-term loans from the Agricultural Bank as in 1940. While between 1953-1956 capital investments of the collective farms increased 90%, their borrowed capital during the same period increased by 104%.

In 1958 and the following years, through the sale of the MTS agricultural machines and other technical means to the collective farms, the role of the long-term credits will increase because the Agricultural Bank will have to help economically weak collective farms to purchase tractors, combines, etc.

It must be pointed out that the part of credit in the capital investments of collective farms varies in different economic regions of the USSR. For example, in 1956 the part of agricultural credits in the total sum of capital investments of the collective farms amounted to 70.1% in the Latvian SSR, 37.1% in the Estonian SSR, 35.7% in the RSFSR, 56.3% in the Far Eastern region, 68.2 in the Khabarovsk region, 74.9% in the Leningrad region, 64.3% in the Moscow region, 67% in the Kaluga region, 1.9% in the Turkmenian SSR, 4.2% in the Tadzhik SSR. 0.4% in the Uzbek SSR, and 7.1% in the Azerbaidzhan SSR. These differences are due to the fact that collective farms have different possibilities for investing their own means in the creation and expansion of the basic productive funds.

As may be seen, the state credit helped collective farms in a number of economic regions, ensuring high rates of reproduction of the kolkhoz basic means. At the same time the collective farms of the Middle Asian republics, which receive substantial incomes chiefly through cotton growing, do not need many loans from the Agricultural Bank and, consequently, the Bank's credit connections with these collective farms are somewhat weak.

It is known that long-term credit played an important part in the organization and economic strengthening of the collective farms and actively contributed to the growth of kolkhoz agricultural production, especially in the period of 1946-1956. During that period long-term credits were of special importance for the building up of livestock breeding farms, the construction of buildings for animals, the mechanization of those processes on livestock farms which require much labor and the creation and expansion of the feed base. Large sums obtained as long-term credit were invested in the construction of rural kolkhoz and interkolkhoz electric stations, electrification of and radio service for collective farms, irrigation and melioration, as well as for the purchase of mineral fertilizers, insecticides, etc.

The long-term credit helped to organize the use of the monetary means of the kolkhoz indivisible funds. It greatly helped to shorten the time needed for putting into use the production facilities under construction—a necessary condition for increasing kolkhoz incomes. In the collective farms whose leaders prudently and effectively use credit means in combination with their own money and labor resources—on such farms, as a rule, the collective is successfully growing and the incomes of the collective farms and the personal incomes of their members are increasing. Beginning with 1958 long-term credit will be widely used to help collective farms to acquire agricultural machines and other technical means for further development of kolkhoz production and continued growth of kolkhoz incomes.

In the theses of Comrade N. S. Khrushchev's report it is pointed out that the time is ripe for the gradual reorganization of the MTS in order to bring the forms of production-technical servicing of the collective farms in step with the growing needs of kolkhoz production, considering local conditions and special features of the economy of individual farms and regions in the country. In the decision of the February plenum of the CC, CPSU, and in the theses of the report to the session of the USSR Supreme Soviet, it is noted that at a certain stage of development of the kolkhoz regime the MTS played an enormous part in the struggle for the socialist transformation of villages. The repair-technical stations (RTS), into which the MTS will be transformed, should render systematic help to collective farms, to ensure timely repairs of tractors and other machines, as well as technical servicing of the collective farms and their supply with everything necessary for carrying out production plans.

The sale of tractors and other agricultural machines to the collective farms will not only strengthen the economic ties between industry and agriculture and between cities and villages, but also will increase the responsibility of the kolkhoz leaders for an effective use of the acquired tractors, combines, and other machines.

Up to now a harmful practice in supplying the MTS with agricultural machines existed. The Ministry of Agriculture planned the distribution of machines and sent them to the MTS frequently without their requests and sometimes it happened that the machines received by the MTS could not be applied. Payments for the machines sent to the MTS were made according to a centralized procedure through a Department of Operations of the Agricultural Bank out of the budget appropriations and the approval of those who obtained these machines was not necessary. As a result in a number of the MTS these machines cannot be utilized and because of the shortage of sheds remain under the open skies and suffer damage, while in some other MTS frequently there is a shortage of exactly these kinds of machines.

Under the new method of purchase of agricultural machines by the collective farms such defects in planning and supplying the collective farms with machines should come to an end. The collective farms will buy agricultural machines needed by them only after carefully examining what machines they have. In order to avoid transferring to the collective farms tractors, combines, and other machines which are in bad repair, out of service, etc., it would be

advisable at the first stage of MTS reorganization to accept them only after a careful checking of the technical state of the machines to be purchased by the collective farms. The appraisal of the machines should be done by a commission of experts which would include representatives of the collective farms with the chairman of the kolkhoz board as their head; the wear-and-tear of the machines should be taken into consideration.

It would be advisable to arrange payments for the transferred MTS machines without the use of cash: the collective farms should deposit a promissory note indicating the dates when payments through the bank are due on the value of the appraised machines accepted by the collective farm. In a case when the collective farm has no means necessary to pay for the acquired machines in one payment, it may obtain a long-term credit from two to five years, the length depending upon the period during which the machine pays for itself and upon the economic situation of the collective farm.

Quarterly payments by the collective farms for their loan obligations for the transferred MTS machines are to be received through the Agricultural Bank as a revenue of the Union budget for covering the expenditures of the past years. The value of the machines appraised and transferred to the collective farm will appear in the books of the Agricultural Bank as a credit reservoir for financing further purchase of machines by the collective farms.

We believe that the majority of the collective farms will be able to take over agricultural machines from the MTS as early as 1958 for their more economic and effective use. Machine operators may leave the MTS and become full members of the collective farms being paid for their work according to its quantity and quality.

The RTS will be self-supporting. Beside repair of tractors, combines, etc., they will carry on technical supervision of the work of agricultural machines and implements transferred to the collective farms. A specially important function of the RTS will be a timely supply of the collective farms with spare parts and fuel the latter will need: upon this depends the successful and timely performance of the field work. It may be noted that the MTS before their reorganization were not made fully self-supporting and this had a harmful influence on their activity.

In connection with the reorganization of the MTS a large number of specialists, now in charge of MTS guidance and supply, will be freed in the Ministries of Agriculture and their departments. This personnel should be used for some other work in agriculture. Quite a number of trained personnel will be freed in the financial and banking institutions, especially in the capital.

The progress of the national discussion of the question concerning the further development of the kolkhoz regime and the reorganization of the MTS shows that the workers, members of the collective farms, workers of the MTS, and all toilers of our country warmly approve and support the measures suggested by the Party concerning the sale of agricultural machines to the collective farms beginning in 1958.

A. Notkin:

Questions of Preparing a Balance of the USSR National Economy

Marx's schemes of expanded reproduction lie at the basis of the schemes for the balance of the Soviet economy. Moreover, the particular qualities of socialist economics and the necessity of making concrete the schemes of reproduction are taken into consideration in the schemes of the balance. Expanded socialist reproduction for a given year, for a given period, and in a given socialist country finds its concrete expression in this balance. It reflects the proportions not only between the production of means of production and the production of consumers' goods, but also between the principal branches of the national economy, the spheres of production and non-production, and the social sectors. The size of production funds, the concrete conditions of price formation and of the redistribution of the surplus product, as well as foreign trade, are taken into account when the balance is drawn up.

Thanks to the application of Marxist schemes of reproduction and to their concretization, the balance of the economy of the USSR represents, at the present time, a system of interconnected indexes of concrete expanded reproduction. On that basis alone, it is methodologically superior to the tables of inter-branch flow of goods and services and the combined economic tables published in capitalist countries.

The drawing up of achievement balances as well as planning balances of the national economy constitutes an important step forward in the perfection of planning in our country. These are called upon to present (on the basis of plans for the development of various branches of the economy) a system of coordinated synthetic indexes of expanded socialist reproduction for the forthcoming period. This system of indices permits the control of both the accuracy of projected plans for the development of separate branches of the economy and proportionality in the development of the entire economy, at the same time taking into consideration reserves brought to light at the center and in the regions.

There can be no question of drawing up balances of the economy in countries of monopoly capitalism. The modern bourgeois state of developed capitalist countries, which represents the apparatus of the political domination of monopolies and concentrates a substantial part of the national income in its own hands, may to a certain degree act upon the structure of social reproduction in the monopolies' interest by stimulating the militarization of the economy. However, under conditions of dominance of private property of capitalist monopolies and individual capitalists, and a struggle among private interests, the bourgeois government is incapable of planning the economic development of the country. Hence, the "economic tables" composed from time to time by certain authors in capitalist countries cannot become instrumental in planning the entire national economy. The future, experience shows, does not represent a simple repetition of relationships which characterized a national economy in the past. The authors of balance forecast tables are embarking on a journey which is full of unforeseen elements. Although they know what the economic weather of the past was, they cannot foresee the capricious changes of the economic weather in the future. The system of the "coefficients of dependence" in the development of various branches upon one another, upon state expenditures, upon the volume of investments, and upon the distribution of the population's income is quite a fragile construction under these circumstances. Even the bourgeois "Business Week" (4/VIII 1956), which praises the "matrices" of the American economist Leontiev, which produced a great stir, says that "the economic situation may in some degree vitiate the predictions for a certain period of time, since the basic figures may be insufficient for this purpose and may lead to certain mistakes."

Determination of inter-branch relationships has practical value for the bourgeois state only in cases where it is necessary to determine the need for various kinds of raw materials, fuel, power, etc., for the fulfillment of the war program, or for subsidizing the expansion of their production. This is why the military authorities of the USA occasionally show some interest in Leontiev's "matrices." However, the real expansion of the production of raw materials, fuel, power, etc. occurs in proportions different from those determined by the "matrices." Seeking to exploit favorable business conditions, the monopolies pay no heed to any kind of balances. Government war contracts are but one of the factors in the development of the capitalist cycle, and this factor interacts with many other factors of reproduction which are not controlled by the bourgeois government.

Economic tables which reproduce in a combined form the state of the capitalist economy for the past periods are of considerably greater interest than these guessing-tables. In spite of methodological defects, an insufficient degree of reliability and a paucity of materials, they give additional material for the scientific analysis of capitalist production. This material deserves critical examination and utilization in Marxist works.

The planned character of social reproduction, which embraces and deeply penetrates all its principal aspects, is a law of the socialist economy. Hence, it is only under socialism that objective conditions are created for the utilization of achievement and planning balances as instruments in planning the national economy.

The solution of several methodological and systematic problems was essential for the preparation and successful utilization of balances in planning.

Substantial work has been done in the USSR in determining the boundaries between the spheres of production and non-production activity. As it is well known, bourgeois economists and statisticians, on the basis of the theory of services, refuse to take notice of the distinct role of each sphere in social reproduction. Logical differentiation between the production and non-production spheres, as it is applied by Marxist economists and statisticians, offers the only scientific basis for the determination in the national economic balance of the size of the social product,

the national income, and of the structure of its production and distribution. We still have, it is true, certain specific problems which are as yet unsolved, problems of demarcation of the spheres of activity. For example, some economists and statisticians consider branches such as passenger transportation a part of the sphere of material production, while others place it in the sphere of collective consumption. The first point of view is based on the argument that modern technology is used in the transportation of passengers, that an action upon nature takes place, and that the product involved in passenger transport consists of services in transporting passengers. This argument is not convincing. Many kinds of consumption are based on modern technology, which acts upon nature. Transport as a component part of material production either participates in the production of means of production and of consumption goods, or continues their production in the sphere of circulation. In both instances, the expenditures of social labor for transportation enter into the social costs of production. Regardless of whether agricultural products or tractor operators are being transported from one part of the USSR to another, the expenses for transportation constitute a part of the social costs for the production of foodstuffs and agricultural raw materials. But in those cases where passenger transport is not participating in the production of means of production or of consumption goods, it represents a part of the collective consumption sphere (for example, transportation of resort-bound people).

For several years, our statisticians included the branches of industrial production in the production of means of production or production of consumption goods depending on the kind of product these branches were primarily manufacturing. Because of this, the relation between departments I and II and its changes appeared in a somewhat distorted form. At the present time, this defect has been substantially overcome. The classification of industrial production is basically built on the principle of the economic destination of the product, regardless of whether it is manufactured in heavy or light industry.

Contemporary bourgeois political economy and statistics counter the Marxist division of the social product into means of production and consumption goods with the division of the social product into durable and non-durable goods. In this way the division based on the speed of the turnover in the process of production and of personal consumption has replaced the division which indicates the connection of and contradiction between production and consumption. It is perfectly obvious that the former distinction cannot replace the latter. The former includes under the heading of durable goods such items as machines, factory buildings, housing, trucks, automobiles, and furniture; while under the heading of non-durable goods it groups foodstuffs, power, products of chemistry, of coal and of petroleum chemistry, etc. In substituting for the Marxist division of the social product into means of production and consumption goods another division, bourgeois political economists strive to avoid the analysis of the increasing contradiction between production and consumption in capitalist nations.

A logical classification of products according to their economic destination, side by side with the division of production by branch and social characteristics creates the only scientific foundation for the analysis and planning of the proportionality of reproduction. It is necessary to note, however, that the process of this classification in developing the balance of the national economy has not yet been completed, and all spheres of material production have not yet been emcompassed by it. In several instances, even in industry the principle of the main destination of the product is applied. It would be expedient to indicate in more developed form in the balance of the national economy the production not only of department I (taking into account the improvements introduced into Marx's schemes by Lenin), but also of department II, denoting it as the production of goods of non-production consumption. Such important divisions as the production of goods for personal consumption, of goods for collective consumption, and of armaments should be included in department II. The solution of the problem in this manner would permit a more precise analysis and planning of the relationship between production consumption and the various kinds of non-production consumption.

The solution by Soviet economic science of the problem of calculating the value of the social product is of great theoretical and practical significance. This problem has caused, and is still causing, a great deal of discussion.(1) One faction of the economists suggests excluding from the value of the social product the turnover of the value of means of production within a year. In this case, the value of the social product in a given year would be defined as the net product, plus the depreciation of basic funds, and the value of the supply of materials for the beginning of the year consumed in the given year. In other words, the value of the means of production would be only partially accounted for in the social product. But since the part of the value of the expended means of production which are carried over from the preceding year is relatively small in the social product, the social product would be nearly equal to the net product of the national economy. Present-day American statistics calculate the gross production of various branches as "value added" (depreciation + wages + profit), and the gross product—as the sum of depreciation and of the national income. As a result, out of 154.8 billion dollars worth of gross production in the USA, 128.5 billion dollars make up the national income, and material expenditures almost disappear.(2)

The practice of preparing balances in the USSR has demonstrated the unacceptability of calculating the value of the social product without accounting for the turnover of means of production within the year. In the first place, it is incorrect to identify a separate enterprise as the prime link between the social division of labor and the national economy, which represents the whole system of the social division of labor in all its interrelationships. This system is constantly reproduced through the economic relationships among enterprises. Therefore, the only proper method of calculating the gross product of the national economy is the so-called factory method. In the second place, several cycles of reproduction take place within one year in the majority of branches. The means of production, manufactured in a given year, in most cases are put into the production process not in the following year (as in Marxist schemes where one year is taken as the period of reproduction), but rather in the course of the same year. A tremendous quantitative difference exists between the volume of the production of coal, petroleum, iron ore, and many other materials during a year, and the reserves of these materials at the beginning of the next year. The explanation for this is that the means of production which are created within one cycle of production are consumed in the following cycle within the same year. The repeated count of the value of materials both as a product in one cycle and as the material expenditures of another cycle within the same year is not a statistical fiction. Human labor in the given year puts into motion not only that quantity of labor embodied in the means of production available at the beginning of the year, but also the total quantity of this labor expended during the

entire year. The social product which is free from repeated counting makes it impossible to determine which part of the social product is made up by the replacement fund and which part by the national income or what are the laws governing the changes of proportions between them. Removal from the social product of the turnover of means of production within the year also results in the distortion of the relationship between departments and branches of the national economy, since the process of compensation for means of production plays an important role in these relationships. The balance of the interrelations between the departments, branches and social sectors may only be determined if full account is taken of the turnover of the means of production within a year. Because of all this, in the practice of drafting the planning and achievement balances of the economy of the USSR, the social product is determined, in the first place, as the sum of the gross product of all enterprises, and in the second place, as the sum of the gross product of all the cycles of reproduction in the given year. As to the method of calculating the purely net product, it may be applied in solving certain problems in cases where it is necessary to disregard the masses of materials needed for the final product.

***

At the present time, the material in its concrete embodiment, value, and social structure of socialist reproduction is expressed in the planning and achievement balances of the Soviet economy. These balances tie in the phases of production, distribution and circulation of the social product.

The tying-in within the balance of the elements and phases of reproduction is done through a system of principal and auxiliary tables of the balance of the economy. In recent years, preparation of a combined table of the balance of the USSR's economy has been suggested which would give a picture of expanded socialist reproduction as a whole. In the suggested table, indexes of the availability of labor and material resources (basic and working funds) for the beginning and the end of a year are given in addition to the main indexes of the balances of the social product and of the national income.

The suggested combined tables undoubtedly facilitate the survey of the basic indexes of the national economy's balance. They afford the possibility of seeing the entire panorama of the process of socialist expanded reproduction in schematic form. Nevertheless, they do not fully solve the problem of perfecting the balance of the national economy and of increasing its role in the planning of the national economy.

At the 20th Congress of the Communist Party of the USSR, the necessity for increased attention to the problems of the economic effectiveness of expenditures of social labor within the entire economy was stressed. The realization of this depends a great deal upon the further perfection of national economic planning, and particularly upon the improvement of work in constructing the balance of the national economy. The balance of the national economy must be considered one of the means for finding ways toward more effective utilization of material and labor resources of the country in the interesis of communist construction.

In order to realize this function of the balance of the socialist economy, it is necessary to show in it not only the balance relationships of socialist expanded reproduction, but also the factors governing these relations. This will permit the determination in the balance of ways toward the most effective utilization of the resources of the national economy. In this article, only the combined table of socialist expanded reproduction is examined from this point of view.

The effective utilization of material and labor resources for the purpose of increasing the productivity of social labor; the extent of accumulation; the rates of expanded reproduction; and the standard of living of the population, all within the entire national economy, depend above all upon the distribution of resources between the production of means of production and the production of consumption goods.

The relationship between departments I and II also provides the key to understanding the changes in conformity with economic laws in the proportions among the branches of the economy. The growth of the part of production of means of production within the entire social production indicates a growth of the part of industry producing the main part of the means of production. Therefore, changes in the proportions of expanded reproduction are determined primarily by a shift in the relationship between the first and the second department. Consequently, it is surprising that the authors of a project for a combined table of the achievement balance of the national economy, which was presented to the All-Union Statisticians' Conference in 1957, did not include a division of social production into two departments.(3)

The effective utilization of material and labor resources for expanded reproduction depends not only upon the ratio between the production of means of production and of consumption goods as a whole, but also upon the ratio between the means of labor (above all, the tools of labor) and the objects of labor (raw materials, semifinished goods, auxiliary materials, power) within department I. As the experience of our economic construction shows, this is a very important ratio of expanded reproduction. The means of labor produced become the basic production funds in the corresponding departments. The growth of production capacities can have the necessary effect for the national economy only if there is an equivalent increase in the production of the objects of labor (taking into account a reduction in their expenditure per unit of the product). This expansion is also necessary for a better utilization of the existing basic production funds.

Technological progress causes a faster expansion of the basic production funds of the first department, and, consequently, the distribution of an ever-increasing part of the objects of labor produced for the benefit of this department. For example, in 1950, the volume of objects of labor produced by Soviet industry intended for the first department was 1.8 times greater than for the second. In 1955, it was twice as large. Because of this, as well as because of several other circumstances, the changes in the ratio of the production of means of labor to the production of objects of labor have their own particular dynamics. In Soviet industry, the production of means of production in 1955 rose 91% in comparison with 1950 (including a 127% increase in the production of the tools of labor); over the same period, the production of consumption goods rose 76%, and the production of objects of labor—77%.

The balance of the national economy cannot accurately express the conditions of proportionality of socialist expanded reproduction and indicate ways for a more effective economic utilization of its resources without tying in the dynamics of the production of means of labor; of the basic production funds; of their utilization; and of the growth of the production of objects of labor (naturally, taking into account their maximum economization). We must mention the fact that our statistics made the first step in the direction of the study of changes in the structure of department I. For example, in the statistical handbook "The National Economy of the USSR in 1956," figures were given of the comparative rates of growth and the ratio between the

production of the tools of labor and production of the objects of labor in Soviet industry during the Fifth Five-Year Plan. Further work on this subject will undoubtedly be of considerable importance in increasing the efficiency of achievement and long-range planning balances of the national economy.

The structure not only of the first but also of the second department is influenced by the rates and the structure of socialist expanded reproduction. The relationship which exists between the rates of development of branches of the economy which do not need much capital and which produce goods for personal consumption and the rates of non-production construction which needs much greater capital investments (it includes housing) is of great importance.

On the basis of what was said above, we may determine the indexes which make up the subject of a combined balance table of socialist expanded reproduction in the following manner:

SPHERE OF PRODUCTION

A. Departments of social production.
   I. Objects consumed (means of production):
      1) means of labor:
         a) tools of labor;
         b) buildings and structures;
      2) Objects of labor (raw materials, semifinished goods, auxiliary materials, fuel, power, etc.).
   II. Objects consumed outside of the sphere of production:
      1) objects of personal consumption;
      2) non-production construction and funds of collective consumption;
      3) armament means.

Total for the departments of social production.

B. Branches of social production.
   I. Industry (including groups "A" and "B").
   II. Agriculture and forestry (including the means of production and consumption goods).
   III. Construction (of both production and non-production character).
   IV. Communications.
   V. Freight transport.
   VI. Supply, commerce, and procurement.
   VII. Other branches.

Total for the branches of social production.

C. Social sectors.
   I. State enterprises. Subsidiary economies of workers and office workers of the state enterprises.
   II. Enterprises of cooperatives and collective farms including subsidiary farms of their members.
   III. Individual peasants and independent artisans.

Total for the social sectors.

SPHERE OF NON-PRODUCTION

A. Housing and municipal economy, passenger transport, public utilities.
B. Education, health protection, science, and arts.
C. General administration and defense.
D. Population (both rural and urban).

Total for the sphere of non-production.

Grand total for the national economy.

The sphere of non-production has been included in the subject of the combined balance table of socialist expanded reproduction because it disposes of a considerable part of the country's social wealth. Since the predicate of the table must include, as we will presently show, not only the elements of the social product but also those of social wealth, it is, therefore, natural that all the spheres in which this wealth is located are to be shown in the subject. Moreover, in order to characterize the rise in the standard of living of the population, it is important to reflect in a combined table not only current consumption but also the amount and changes in personal property of the rural and urban population in non-production funds.

The structure of the subject does not yet, in itself, permit in the balance a tying-in of the elements of socialist expanded reproduction on a basis which would be most effective economically for the entire national economy. Such a tying-in can be achieved only if there is a corresponding conjunction of the subject with the predicate. If the subject shows what spheres, branches, products, and social sectors are reproduced, the predicate must show the phases of this reproduction, i.e., the production, distribution, circulation, and consumption in their unity.

How must we arrive at the contents of the predicate's structure in the combined table of socialist expanded reproduction?

The systematic growth of the physical volume of the national income as the source which satisfies the constantly growing demands of the entire population and the ceaseless expansion of socialist production is characteristic of socialist economics. Because of that one of the most important problems of socialist expanded reproduction is the mobilization in each enterprise, in every branch—as well as on a social scale—of resources and reserves for the systematic expansion of the physical volume of the national income. The termination of indexes for the phase of production in the predicate of the combined table must be examined in this light.

Each department, each branch of social production, and each social sector possesses a certain quantity of basic and working funds for production and a certain number of workers for the beginning of a year or of another planned period. An increase in the product—including net product—in departments, branches, sectors, and in the sphere of production as a whole, shown in the subject, may be attained through better utilization and expansion of production capacities and also through a corresponding increase of working funds, after taking account of possible economies. The production may grow through an increase in expended working time and/or an increase in the productivity of labor. All these factors operate simultaneously, and their action is interwoven. The expansion of the basic production funds at an unchanged level of technology (the case of extensive expanded reproduction) demands a corresponding increase of expended working time; it also leads to an increase in the productivity of labor if the technological quality of these funds is increased (the case of extensive expanded reproduction).(4) Better utilization of production capacities very often leads to savings not only of embodied but also of living labor per unit of production. Savings in working funds indicate economy of labor embodied in goods, as well as of living labor in branches producing raw materials, fuel, and auxiliary materials. Hence, the action of all the factors of growth of the physical volume of the social product and of the national income is refracted through the action of two factors—the increase in the amount of expended working time and the growth of productivity of social labor (i.e., the economy of embodied and living labor

per unit of production). Thus, socialist production relations also influence through these factors the changes in the social product and the national income.

The greatest possibilities for the expansion of the physical volume of the national income are created by an increase in the productivity of social labor. During the period 1951-1955, nine-tenths (and over four-fifths in 1956) of the entire increment of the national economy's physical volume were a result of the increase in the productivity of social labor (the growth of per capita production and saving of means of production). The change in the structure of employment in the national economy in favor of industry and other branches, in which the amount of net product per worker is considerably greater than in agriculture, in part contributes to the growth of national income through increased productivity of labor. In the Fifth Five-Year Plan, the average yearly rate of population increase amounted to 1.65%(5) while the rate of increase of industrial workers was 4.76%. But even when this factor is considered the growth of the productivity of social labor still represents the principal source for the increase in the physical volume of national income.

The increase of the productivity of social labor may be partly achieved through better utilization of means of production and of the labor force in existing enterprises and through the improvement of the organization and planning of the entire social production without great capital investments. However, the most important foundation for the increase of the productivity of labor in the entire economy is technological progress in already functioning or newly constructed enterprises. The latter is, as a rule, connected with substantial investments in the basic and partially working production funds (for example, when expenditures for power and gas per unit of production are increased). Thus, in the industry of the USSR in 1956, the basic production funds were 1.9 times as large as they were in 1950, while over the same period the industrial production personnel rose 1.3 times and the output per worker—1.5 times. In order to raise the output per worker approximately 1.5 times, it was necessary to increase the funds per individual worker 1.4 times. Consequently, because of the improved utilization of existing basic funds, of the greater effectiveness of new technology, etc., less basic means had to be expended per one percent of increment of output than before.

The increase in the output per worker is also related to the increase in the objects of labor expended. If the expenditure of the objects of labor per worker increases at a rate slower than that of output, this is an indication—if other conditions are equal—of an economy of working funds as a whole.

The increase in the productivity of social labor finds a further corresponding expression in the decrease of all expenditures per unit of the social product along with the relative increase of the part of material expenditures and the lowering of the share of expenditures of living labor. Simultaneously the increase of the productivity of social labor, since it is based upon technological progress, demands a change in the proportions between the departments and branches of production. The growth of the funds per worker and technological progress in the production of objects of non-production consumption lead—on the basis of machine production—to a relative shifting of a part of the working time of the society into the sphere of the production of the means of labor and of those objects of labor which are related to modern technology—such as metals, power, and synthetic materials. Technological progress, the rise in funds per industrial worker and the increase in the rate of production accumulation determine in their turn a relative transfer of a part of the working time of society into the sphere of the production of means of production (especially of labor) for production of means of production. Moreover, a constant differentiation and multiplication of the number of branches takes place, particularly of branches producing the means of production. The need for capital and for electric power for the products in the first department is higher than in the second. Consequently, the production funds in the first department grow, in comparison with the basic funds of the second department, at a greater rate than the product of the first department in comparison with the product of the second. If we take the entire sum of the means of labor, functioning in both departments of social production, on one hand, and the sum of the production of consumption goods in industry, agriculture, and construction, on the other hand, then—for more or less long periods of time under conditions of intensive technological progress and accumulation—the first sum, as a rule, grows more rapidly than the second. Unfortunately, our statisticians do not yet compute the entire sum of consumption goods produced in our national economy. The production of consumption goods in industry rises over more or less long periods at a considerably faster rate than in the entire national economy. Yet, the principal production funds of the whole economy often expand more rapidly than the industrial production of consumption goods. Thus, over the period 1940-1956, the basic production funds in the entire Soviet economy increased 2.45 times, while industrial production of consumption goods—2.37 times. In its turn the growth of basic production funds in the entire economy, over more or less long periods under conditions of intensive technological progress and accumulation, demands an even greater expansion of the production of the means of labor. The ratio of these two quantities depends upon the level of production of means of labor and rates of growth of the basic production funds. For example, from 1950 to 1955, the basic production funds of the economy of the USSR rose 1.6 times, whereas the production of the tools of labor in industry rose 2.3 times over the same period. Thus technological progress and the growth of funds per industrial worker lead to an increase in the share of material outlays in the value of the social product as well as to an increase in the part of the first department, especially of the production of means of labor in the entire social production. The law of the greater rate of growth of the production of means of production is demonstrated by these two interrelated forms.

The proportion between the growth of labor productivity and the growth of the fund of real wages is also related to this law. The growth of labor productivity under socialism creates the conditions for an increase in real wages. Moreover, the increase of labor productivity on the basis of technological progress is indissolubly connected with the greater rate of growth of the production of means of production. The increment of production, which results from the increase of labor productivity, consists more and more of means of production. The increase in labor productivity calls for an increase in the share of the accumulation of means of production in the net product. Therefore, the social fund of real wages calculated per worker expands more slowly than labor productivity. This pattern also manifests itself in the value form. Material expenditures rise more rapidly than the net product when labor productivity is increased. Remuneration for labor, however, cannot grow more rapidly than the net product. Otherwise, the share of accumulation would be reduced. Consequently labor productivity—calculated as the output per worker—must increase more rapidly than the fund of money wages (unless, of course, there is a decrease in the purchasing power of money). In the Fifth Five-Year Plan, there was a 40% increase in real wages in Soviet industry while labor productivity rose 44%.

The relationship between the growth of the funds per industrial worker and the increase of labor productivity, in the final analysis, influences the rates of growth of the social product's physical volume and that of the national income. A change in this relationship leads to a shift in the relationship between the dynamics of the basic production funds and the dynamics of the physical volume of the social product and of the national income. When the productivity of labor rises more rapidly than the funds per industrial worker (provided that the number of production workers remains the same or becomes larger) there is a correspondingly larger increment in the physical volume of the product and of the national income per each percent of the growth of basic production funds. For instance, in the period ranging from 1950 until 1956, the output per industrial worker of the USSR grew 1.1 times in comparison with the growth of the fund per industrial worker; the "return" of the basic funds also increased 1.1 times. When, on the contrary, labor productivity increases more slowly than funds per industrial worker, the "return" of the basic production funds is reduced. A more rapid increase in the productivity of labor as compared with the funds per industrial worker is mostly related to the introduction of highly productive and relatively less expensive machine technology, as well as to the improvement in its utilization. Marx wrote that "the place of old machines, instruments, apparatuses, etc. is taken by new, more productive, and, relative to the amount of work done, less expensive machinery. Old capital is reproduced in a more productive form, not to speak of the constant changes in parts of the existing means of labor.(6) At present, when technological progress is increasingly expressed not by replacement of manual labor with machinery, but rather by its further development, the prevailing trend is toward increase of the "return" of the basic production funds in the form of product and of national income.(7) The prevalence in recent years of this tendency in the Soviet national economy as a whole is illustrated by the following figures (1950 = 100):

	1951	1952	1953	1954	1955	1956
Basic production funds of the national economy	110	121	133	147	165	183
National income (in comparable prices)	112	125	136	153	171	192

Obviously, the planned balance of the national economy must determine, on the basis of detailed calculations for various branches, how to achieve—for the sake of increasing the physical volume of the national income and increase in the national consumption in the given planning period—optimum ratios between: 1.) the growth of funds per industrial worker and the growth of labor productivity; 2.) material expenditures and expenses of living labor; 3.) the output of means of production and the output of consumption goods; 4.) the production of the means of labor and objects of labor; 5.) the growth of the productivity of labor and the growth of the remuneration of labor; 6.) the dynamics of the basic production funds and the physical volume of the product and of the national income.

All these ratios are interdependent, and at the base of their changes lies the growth of the productivity of social labor based upon technological progress. In determining these ratios, all other factors which increase the productivity of labor in the given period, changes in the rate of accumulation, etc., must also be taken into consideration. It is evident that the smaller are the expenditures of basic and working funds for each per cent of increment in labor productivity, the greater can be the increase in the physical volume of the national income (of course, under the condition that all the possibilities for increasing the productivity of labor are utilized). The goal in mind, quite obviously, is the attainment of a more favorable ratio between the growth of funds per industrial worker and the productivity of labor, without causing excessive intensity of labor as under capitalism, but under normal conditions of intensity.

Let us enumerate a few prerequisites for a more auspicious ratio between these two elements which must be taken into consideration when detailed calculations are made by branches. Here first of all should be mentioned increasing the part of machines; methods of production and collectivization of labor which would result in a decrease in capital investments and of the cost of production (for example, open-cut mining of minerals, the creation of larger, combined and specialized enterprises); economy in capital investments in interlinked branches (power production, fuel mining, transport, repair bases, etc.) through the creation of enterprises serving common objects, or through improved exploitation of available capacities; an increase in the part of branches (when different branches are producing interchangeable products) which require smaller capital and current expenditures per unit of production (for instance, per 1,000 calories of theoretical fuel); ensuring a more favorable ratio of reconstruction and expansion of functioning enterprises to the construction of new enterprises (taking into account certain problems of location of production forces); exploitation of favorable natural and economic conditions available when distributing enterprises geographically so as to ensure the greatest possible reduction in relative investments and in the cost of production for producers and consumers (taking into account transportation costs); economy of capital investments through the introduction of improved building methods; improvement in designing and reduction in the value of construction work; the exploitation of all available opportunities for the fastest possible mastering of the rated capacities.

The economy of the basic funds in indicated instances is not in contradiction to application of more advanced technology. At the same time it contributes toward reducing the need for funds per industrial worker for obtaining the product and a more rapid increase in labor productivity by comparison with the need for funds per industrial worker. Practice has shown that, sometimes, the introduction of progressive production technology and the lowering of the cost of products are related to an increase in the need for funds per industrial worker for obtaining the product and to additional capital investments. In such a case, one of the factors of the acceleration of the socialist accumulation process, as well as of the growth of the physical volume of the product and of the national income is the introduction into the given branch of advanced technology which ensures the greatest decrease in the cost of the product (or the greatest increase in profit) relative to the additional capital expenditures.

The purpose of the juxtaposition of indices of funds per industrial worker and of labor productivity in the balance of the national economy is to discover possibilities for the acceleration of the growth of the productivity of labor, and for the faster growth of the volume of national product and national income; it is quite evident that reduction of expenditures needed to obtain each percent of increase of labor productivity frees additional means for the growth of labor productivity, for the increase of the physical volume of the na-

tional income and for raising the standard of living of the population.

In order to reflect the process described above, it is useful to include the following indices in the first part of the predicate of the combined balance table of socialist expanded reproduction.

MATERIAL AND LABOR RESOURCES

- Funds and reserves for the beginning of the year (existing production funds: basic and working funds; incompleted production and construction; non-production funds; centralized reserves).
- Number of those occupied at the beginning of the year.
- Average annual production funds (basic and working).
- Average annual number of those occupied; working time spent in the sphere of production (in thousands of man hours).
- Average annual fund per industrial worker or per thousand man hours in the sphere of production.
- Growth of the fund per industrial worker (in % over the preceding year).

PRODUCTION

- Gross production (in planned prices; in an achievement balance—in current prices).
- Material expenditures, net product, including: payments for labor, net income, ratio of material expenditures to the net product, transportation and trade-supply costs.
- Growth of the gross and net product in constant prices (in % over the preceding year).
- Increase in the productivity of labor.
- Ratio of the increase in the productivity of labor to the growth of real wages.
- Ratio of the increase in productivity of labor to the fund per industrial worker.
- Changes in the gross product per 1,000,000 rubles of basic production funds.
- Growth of gross and net product in constant prices through an increase of expended working time and increase of productivity of labor.
- Growth of gross and net product in constant prices per capita.

IMPORT FROM ABROAD

TOTAL AVAILABLE FOR DISTRIBUTION (gross product plus import in planned prices, or in current prices for an achievement balance).

We do not have the opportunity here to discuss the method of calculating these indices. Let us only note that, since the table is composed in planned, current, and constant prices, the value structure of production (gross product) is expressed not directly in terms of the transferred value of the means of production, the necessary and surplus product, but rather in terms of the concrete price expression of material expenditures, labor remuneration and net income. In this table, freight transport, trade, supply, and procurement appear as branches of material production with their funds and expenditures of social labor. Although they do not in themselves produce material goods, and only serve to increase the value of the means of production and consumption goods produced in other branches, transport and trade-supply costs are included in the predicate of the table in order to determine the volume of gross production of departments and branches which goes into distribution. Obviously, the product of the transport and trade-supply apparatus must be accounted for once in the general sum of production of the product. The sphere of non-production in the subject of the table, naturally, does not entail any gross product; it is related to the indexes of the first part of the predicate only through graphs of non-production funds, centralized reserves and the average annual number of occupied persons.

The factors which determine the rates of growth of the social product and of the national income, basically also determine the main directions of their distribution and utilization. The proper distribution and final utilization of the social product must provide for a further increase of expanded working time, for the greatest possible rise in the productivity of social labor and national consumption, and, consequently, for proper ratios between spheres, departments, branches, and sectors. They must also be instrumental in overcoming disproportions in the national economy.

The search, based upon the system of natural balances, for ways to achieve the most efficient distribution and utilization of the social product in order to increase production, public consumption and utilization of the social product constitutes one of the principal tasks of the planning balance of the national economy.

The second part of the predicate must include the following indices:

DISTRIBUTION OF THE GROSS PRODUCT.

- Increment (diminution) of uncompleted production and construction;
- Increment (diminution) of producers' stocks;
- Production not for the market;
- Gross product received by
  - the departments of social production; (8)
  - the branches of social production; (8)
  - the social sectors of production; (8)
  - the sphere of non-production; (8)
- Export abroad.

FINAL UTILIZATION OF THE GROSS PRODUCT.

- Total utilized for:
  - Actual replacement of production funds (basic and working);
  - Expansion of production funds (basic and working);
  - Expansion of non-production funds;
  - Losses.
- The part in the national income of production accumulation, non-production accumulation, current consumption.
- Growth of replacement, production and non-production accumulation, and current consumption as % over the preceding period.

MATERIAL AND LABOR RESOURCES FOR THE END OF THE YEAR.

- Funds and reserves (existing production funds: basic and working; uncompleted production and construction; non-production funds; centralized reserves).
- Growth of funds and reserves in % over the preceding period.
- Number of those occupied.
- Increase in the number of occupied in % over the preceding period.

The reason it is necessary to single out production accumulation and calculate its rates is the fact that this accumulation, being directly related to the proportion between the production of means of production and the production of consumption goods in the entire economy, determines the rates of expanded reproduction. The product of transport and trade-supply organizations entering the product of the departments, branches, and social sectors of social production in the form of transport and trade-supply expenditures is not independently distributed.

A balance table of socialist expanded reproduction should also be prepared in each of the Soviet republics. This kind of table, however, will call for certain revisions in the predicate, since the movement of the product to and from a republic should be reflected.

It is self-evident that the preparation of a combined balance table of socialist expanded reproduction does not rule out the necessity of constructing other balance tables. The effect of the law of value and the existence of distribution and redistribution value ratios within socialist economics determine the great importance of a balance of the production, distribution, and redistribution of the social product and of the national income in the national economy. The role of various balance computations is paramount in planning the balances of labor, of basic funds, and of the population's monetary incomes and expenditures.

The combined balance table must be the instrument through which the tying up of the basic elements of socialist reproduction for a more effective utilization of the resources of our country is achieved.

FOOTNOTES

(1) c.f. Academician S. Strumilin, "A Contribution to the Theory of the Balance of the National Economy" (Planned Economy, No. 9-10, 1936); A. Notkin and N. Tsagolov "S. Strumilin's Theory and Scheme of the Balance of the National Economy of the USSR" (Planned Economy, No. 4, 1937); S. Strumilin, "The Balance of National Economy as an Instrument in Socialist Planning" (Problems of Economics, No. 11, 1954); P. Moskvin, "Certain Problems in Creating a Balance of the National Economy" (Problems of Economics, No. 12, 1954); V. A. Sobol, "The Principal Methodological Problems of an Achievement Balance of the National Economy" (Materials for the All-Union Statisticians' Conference, 1957); M. Bor, "Certain Methological Problems of Preparing the Planning Balance of the National Economy" (Problems of Economics, No. 1. 1958) etc.

(2) Yearly average for the period 1939-1948 in current prices (S. Kuznets, "Long-Term Changes in the National Income of the USA Since 1870," Income and Wealth, 1952),

(3) For the sake of fairness, we must note that in several other tables of the achievement balance of the national economy, the CSA does divide social production into two departments. It is, therefore, all the more incomprehensible why this most important division is missing from the combined table, which must show interconnections determined by economic laws that exist in the entire socialist expanded reproduction. The fact that the present state of statistics does not permit the completion of corresponding graphs for all indexes is scarcely a justification for the omission of this proportion from the combined table.

(4) Experience has shown that extensive expanded reproduction, as a rule, is a moment of intensive expanded reproduction, just as simple reproduction is a moment of expanded reproduction. If the social production of the USSR is examined as a whole, both the expended working time and the productivity of labor are systematically increased.

(5) The growth of the number of those employed in the material production in cities and villages in that period could hardly have been greater than the general growth of the population.

(6) K. Marx, "Capital," Vol. I, 1954, p. 610.

(7) Certain economists consider that increase in the "return" of the basic funds opposes the function of the law of the greater rate of increase in production of means of production. However, under any circumstance, technological progress is expressed in a relative increase of the share of material expenditures—and consequently of means of production—in the social product. Besides, a more rapid growth of the national income creates conditions which are favorable not only to the increase of national consumption but also to the growth of accumulation and to the acceleration of technological progress.

(8) More detailed division is given in the subject.

K. Klimenko:

The Development of Soviet Machine Building

In all stages of socialist construction the Communist Party gave and is giving great attention to the development of industry — the leading branch of the country's national economy.

During the years of the Soviet regime industry of our country has grown at exceptionally high tempos, much (three to five times) higher than the rate of development of industry in the advanced capitalist countries. Industrial production in the USSR increased by 33 times from 1913 to 1957 and, in particular, by 25 times since 1928. The average annual rate of growth of production over 40 years (1918-1957) was 10% (16.2% if the war years are excluded), as compared with an annual growth in France, England and the US of 1.9-3.2% (excluding the war years: 2.6-3.6%).

USSR heavy industry developed more than twice as rapidly as industry as a whole; the output of heavy industry increased from 1913 to 1957 by 74 times, while the growth of the entire industry was 33 times.

The rate of growth of the machine-building and metalworking industries was almost five times faster than that of industry as a whole, and almost three times faster than that of heavy industry as a whole.

In 40 years the output of the Soviet machine-building and metalworking industries surpassed more than 200-fold the level in 1913, i.e. the level that was achieved by this branch in prerevolutionary Russia in several hundred years. Besides, one has to consider that in 1920 the volume of production of this branch of industry represented only 7.5%, if compared with prewar, and therefore this branch had to be developed starting from this low level.

US machine-building increased 16.7 times from 1913 to 1956, English five times and French 2.4 times. And in the US most of this growth was during the war years (from 1913 to 1917 by three times, and from 1940 to 1956—again three times).

The high tempo and the large-scale growth of machine-building in the USSR seem impossible at first sight. But their reality is confirmed convincingly enough by the high tempo of the growth of production in natural terms in most of the basic branches of machine-building.

Because the high tempo of large-scale reproduction in the national economy as a whole depends mostly on the rate of growth of heavy industry, the output of a number of branches of machine-building and the technical equipping of the leading branches of machine-building increased during the 40 years at the highest rate. Those branches were: power and electrical machines, machine-tools, heavy machine-building and mining and chemical industry machines, construction and transport equipment, etc. The automobile construction and tractor industry also developed rapidly; they practically did not exist before the revolution and during the first years of the Soviet regime. The same is true in respect to grain-combines and other agricultural machines.

In the power and electrical-machine industries the output of steam and gas turbines (in their total power) increased from 5,900 kilowatts in 1913 to 4,226,000 kw. in 1956, i.e. almost 720 times.* The production of steam turbines and hydroturbines, in total power, increased from 1913 to 1956 almost 1,000 times, and of diesel engines over 100 times. From 1928 to 1956 output of hydroturbines (in terms of power) increased 190 times, of generators 70 times, of electric motors 40 times, of electric furnaces more than 1,600 times, and electrical equipment for motor-tractors hundreds of times. Production of machine-tools increased from 1913 to 1956 more than 80 times—and if we consider the increase in their power and productivity, more than 200 times. The output of metallurgical equipment increased from 1932 to 1956 25 times, of cranes almost 80 times, of electric locomotives for mines more than 20 times. The output of excavators increased from 1931 to 1956 by almost 3,400 times. During 1910-1913 no more than 150 automobiles were produced; in 1956 465,000 cars were manufactured—i.e. 3000 times more. The production of ball-bearings and roller-bearings increased from 1931 to 1956 by over 400 times. Tractor production was started in the USSR in 1923, when the first two tractors were manufactured; in 1924 the output was 11 tractors; in 1956 184,000 units, or 371,000 if expressed in terms of 15-hp. tractors—i.e. tens of thousands of times more. The production of grain combines began in the USSR in 1930, when 347 combines were built. In 1956 output was 81,800 combines, i.e. almost 240 times more.

When evaluating the rate of growth of our machine-building during the years of Soviet power, one cannot fail to consider that by the end of the First Five-Year Plan new industries began to operate and in subsequent years were considerably developed. In heavy machine-building, production of coal combines, ore-lifts, oil equipment, turbodrills and equipment for the chemical industry was started; in agricultural machine-building, tractor potato-planting machines, seeding and planting machines, potato-harvesters, beet-harvesters and corn-harvesters; in light-industry machine-building, production of a number of new machines for artificial fiber, knit goods, leather footwear, the sewing, printing and publishing industries, etc.; in the machinery for construction and road-building, production of scrapers, bulldozers, and many other types of equipment. Such new industries as the manufacture of instruments and apparatus, radio sets, household electrical appliances, etc. grew even faster. For instance, the output of precision instruments—the basis of the complex automation of production—increased by 30 times from 1940 to 1956 (while for the same period total output by the machine-building and metalworking industries increased by 5.2 times).

In only a few branches of machine-building the growth of production in the period 1913-1956 was relatively insignificant. Thus, the output of locomotives—steam engines, motor locomotives and electric locomotives—increased in physical units only twice in these years (considering their trebled power, six times), the output of freight-cars four times (considering their capacity increased approximately three times, the total increase was 12 times).

The exceptionally high rate of growth of Soviet machine-building led to a radical change in the correlation between the levels of output of the most important types of machine-building products in the USSR and the US. In 1913 we pro-

*1928 is taken as the base when comparing the output of items that were not produced in prerevolutionary times.

duced only 1,500 metal-cutting machines, and in 1928 2,000; while the US produced 30,000 in 1919 and 43,000 in 1929, i.e. 20 times more. In 1956 the USSR produced 126,000 machine-tools, while in 1953 the US produced 220,000, i.e. only 1.8 times more. In 1960 the USSR will produce 200,000 metal-cutting tools, i.e. as many as the US produced in 1953 and 1954.

The over-all capacity of turbines produced in our country in 1913 was only 5,900 kilowatts, and in 1928 44,000 kilowatts. In the US for the same period the average annual growth in the capacity of electric power stations was one to two million kilowatts, i.e. hundreds of times more. By 1956 the aggregate power of all the turbines produced in the USSR—steam, gas and hydroturbines—amounted to 5.8 million kilowatts. In the US in recent years the average increase in the capacity of electric power stations was 10 to 14 million kilowatts, i.e. only twice as much as in the USSR. In 1960 the USSR will produce turbines with total power of 13 million kilowatts, i.e. as much as in the US in 1954.

In spite of the fact that car-building is developing more slowly in the USSR than most other branches of machine-building, our country turned out 40,000 freight-cars in 1956, while in 1954 the US produced 38,300.

Tractor production in the USSR, which did not exist in the twenties, in 1956 reached (in number of units) almost 50% of US output, and considerably more in terms of power.

It is noteworthy that the exceptionally rapid growth of production in the machine-building and metalworking industries during the last 40 years was obtained along with a considerably slower development of production in the main raw-material base of this branch—ferrous metallurgy. From 1913 to 1956 production of pig-iron increased nine times, of steel 12 times and of rolled metal 11 times. Thus, machine-building and metalworking production increased 17 to 20 times more rapidly than that of ferrous metallurgy.

This correlation between the dynamics of machine-building and ferrous metallurgy is explained by the following. Firstly, machine-building considerably increased the utilization of scrap (in the foundry), of nonferrous metals, plastics, rubber, leather, textiles, etc. The production of most nonferrous metals (zinc, lead, aluminum, nickel, etc.) increased tens and even hundreds of times during the 40 years. Secondly, the proportion of machine-building in total consumption of ferrous metals increased considerably. Thirdly, much of the ferrous metals used in machine-building now is high-quality steel, and 1.5 to 2 times less of it is needed for the same articles; in 1913-1928 very little high-quality steel was produced. Fourthly, in machine-building the proportion of those branches in which less metal is used increased greatly—instruments and apparatus, power machines and electric machines, motors, automobiles, etc.—and the proportion of branches requiring much metal was lowered: locomotives, railroad-cars, agricultural machines (the amount of metal used in power machines and electrical machines is approximately four times less than in building locomotives, railroad-cars, etc.). Besides, as machine-building develops the weight of the machines themselves is steadily decreasing, and accordingly the use of metal per unit power or unit productivity is decreasing too. For instance, in the postwar years alone the use of metal per unit power of locomotives and per unit loading capacity of railroad cars decreased by 20-25%. By 1939-1940 the use of metal per horsepower in automobiles decreased 30-35%; per horsepower in tractors—27-28%. In 1949-1955 the norms of expenditure of metal for many machines decreased 18-20% and more. The weight of a motor (per unit horsepower) has decreased some 10-12 times since 1913, the weight of a 10-horsepower electric motor decreased (1925-1953) more than four times, and the weight of a tram-car motor (1926-1947) decreased almost three times. Finally, it is very essential that along with technical progress the lowering of machine-weight is accompanied by a considerable decrease of waste and, consequently, by an increase of the coefficient of utilization of metal in production.

But the difference in the rate of development of machine-building and metallurgy is causing a growing tension (especially in the last few years) in the supply of metal to machine-building.

As a result of the rapid growth of machine-building, its influence on the tempo of large-scale reproduction increased. The correlation between the need for machines and their production considerably improved; it became easier to ensure the supply of machines to all branches, to speed up the replacement and renovation of equipment, in particular, the renovation of machine-building equipment itself. Before the First World War, when the country had about 75,000 metal-cutting machinery, annual production amounted to 1,500, which could secure the renovation of all of them in 50 years. Domestic output provided only one-fourth of machine-building's requirements in lathes, while three-fourths was imported. In 1956 machine-tool output was 124,000, and the total in operation was 1,840,000. Thus, the entire stock could be renovated in 15 years—and even quicker, because the new equipment is more productive than the old and also the present stock of lathes is being modernized.

In 1956 the total power of the electric stations of the USSR was 42.8 million kilowatts, and the output of steam turbines and hydroturbines amounted to 5.8 million kilowatts; all the turbines in electric-power stations could be renovated in seven years. By 1960 the output of the turbines will reach 13 million kilowatts. Thus, conditions are created not only for rapid reproduction of the capacity of the electric power stations, but also for a high tempo of large-scale reproduction. In this connection their number can be doubled in five to ten years. In 1940 the capacity of all electric stations amounted to 11.2 million kilowatts, in 1950 to 19.6 million kilowatts and in 1955 to 37.2 million kilowatts. One can judge the influence of machine-building on the general acceleration of large-scale reproduction of the equipment—the most active part of the basic funds of production—by the following comparison of the rate of growth of production of machine-building and metalworking and the rate of growth of basic funds in industry and the national economy as a whole for the period 1913-1956 (in percent):

All the basic funds	775
production funds in industry and construction	1,480
	3,258
Production of machine-building and metal-working	18,400

The possibilities for accelerating renovation of equipment and large-scale reproduction are increasing, as we can see, many times.

Of considerable interest is the change in the rate of growth of machine-building production for separate periods between 1913 and 1955:

1913-1922	by 1.8 times	1940-1946	by 0.86 times
1928-1932	" 3.9 "	1940-1950	" 2.15 "
1932-1937	" 2.9 "	1945-1950	" 1.67 "
1937-1940	" 1.75 "	1956-1950	" 2.5 "
1940-1945	" 1.28 "	1950-1955	" 2.2 "

These figures testify that the maximum rate of growth of machine-building production occurred during the First Five-Year Plan, for the initial level was not high. Since then there has been no considerable decline in the rate of growth of machine-building. The rate of growth of production in this branch during the Fifth Five-Year Plan was only slightly lower than during the second and fourth. At the same time the data above show how the growth of machine-building production was affected by the war and the transition to peacetime production. At the end of the war (1945) and in the year of transition to peacetime production (1946) machine-building output essentially remained approximately at the 1940 level; in 1945 it was somewhat higher, and in 1946 somewhat lower. All this permits the conclusion that if there had been no war the total growth of production of machine-building and metalworking during the period 1913-1957 would have been 2-2.5 times higher.

The enormous quantitative growth of Soviet machine-building during these 40 years was accompanied by qualitative changes unprecedented in scale and tempo, by technical progress in this branch of industry, and this has secured the raising of other branches of industry, and of the national economy as a whole, to a higher technical level.

The basic goals and at the same time the main problems of technical progress are: improvement of the means of production; improvement of production technology, i.e., its technical methods; improvement of the technical qualifications of raw and other materials and raising their technical effectiveness; and improving the product.

In the process of the development of Soviet machine-building great successes were achieved in perfecting the instruments of production in all branches of the country's national economy, and creating and installing the most powerful and productive equipment. Not only has the capacity of equipment increased but also the intensity, speed and accuracy of its work, its operating qualities have improved, the expenditure of fuel and energy for servicing it has decreased; it weighs less; specialization and aggregation of equipment and centralization of its operation has been realized; mechanization and automation has increased, working conditions at these plants have improved, etc.

One can judge the scale of work on perfecting equipment, for instance, by the fact that during the first years of the Fifth Five-Year Plan from 500 to 600 new machines were mastered annually, while during the last years of that five-year-plan 900 to 1,000 machines and mechanisms of various types were mastered.

Raising the technical level, capacity and technical and economic effectiveness of machines and equipment in all branches of the national economy was based on raising the technical level and effectiveness of the productive equipment of machine-building itself: of machine-tools, forge-presses, equipment for casting, welding, heat treatment, etc. The most important qualitative and quantitative improvements occurred in machine-tool equipment; this is explained by its high proportion in the total equipment and also by its leading role in production. Along with the increased output of machine-tools there are considerable changes in their assortment and increases in the proportion of those which are more productive. In 1928 only the simplest and inefficient universal lathes, mainly turret lathes, grinding machines and drilling machines, were manufactured. Out of 1,978 lathes manufactured in 1928 830 were turret lathes, 546 vertical drilling machines, 216 planing and mortising machines and only 53 milling machines. All these machine tools had step-pulley transmission. By 1932 production of 40 types of machine-tools was mastered. But automatic, semi-automatic, aggregate, gear-making and broaching machines were not yet manufactured. The output of these machine-tools started only at the end of the Second Five-Year Plan.

In 1955 a considerable portion of the total output of machine-tools was of highly efficient machine-tools, automatic and semi-automatic devices, milling machines, gear-making machines, boring machines, grinding machines, specialized and aggregate machine-tools, as well as the big and heavy unique and precision tools.

The Structure of Machine-Tool Output, 1928-55
(in % of total output)

	1928	1932	1955
lathes (turning)	42.0	36.0	27.0
turret-lathes	-	2.5	2.4
automotic & semi-automatic (turning)	-	-	1.3
milling machines	2.5	5.4	6.3
gear-making machines	-	-	1.7
boring machines	-	0.3	0.6
planing machines & mortising machines	11.0	5.6	4.0
grinding machines	0.15	1.3	3.4
stretching machines	-	-	0.3
drilling machines	27.0	34.0	23.0
special, specialized & aggregate	-	-	14.3
precision tools	-	-	5.0
big, heavy & unique	-	-	3.0

Thus, the proportion of turning lathes, planing, drilling and mortising machines decreased from 80 to 54%. The proportion of the most progressive types of machine-tools increased from 4% in 1928 to 37% in 1956. The number of types of machine tools for metal cutting considerably increased. In 1932 40 types of machine tools were manufactured, and in 1955 847 types, aside from tens of thousands of special tools manufactured on separate orders. During the Fifth Five-Year Plan alone about 400 types of tools were mastered. The technical qualities of machine-tools were considerably improved. Their capacity and speed were increased. The power of the big lathes increased from 15-20 horsepower to 50-200 h.p. The speed of turning lathes increased 7-10 times, up to 2,000-3,000 revolutions per minute. Grinding machines operating at tens of thousands of revolutions per minute are manufactured. The high-speed machine-tools, fitted with hard-alloy instruments, secure cutting speeds of hundreds and even thousands of meters per minute.

Great successes were achieved by machine-building in the field of automation of machine-tool equipment, which is developing in the following main directions: 1) partial automation of existing and new machine-tools, in particular through the use of various automatic appliances; 2) creation of partially or completely automated milling-machines, drilling machines, grinding machines and other machine-tools; 3) creation of automated or semi-automated multi-instrument and multi-position special and aggregate machine-tools, embodying the principle of high concentration and combination of different operations; 4) creation of special machine-tools —automatic or semi-automatic, in particular multi-instrument and multi-position; and 5) organization of automatic lines composed of a number of aggregate tools and automatic and semi-automatic devices.

In 1956 the total number of automatic and semi-automatic devices reached 100,000 and constitute 6.5% of the total number of machine-tools (against 10% in the US). The number of automatic lines in machine-building now exceeds 200. On the

automatic lines big details of frames are constructed —cylinder blocks and cylinder heads of motors, various shafts and rollers, piston-rings, hoops for rollers and ball bearings, wheels and pistons for automobiles, plow-shares and earth-boards, rake-prongs, bolts, screws and nuts, needles for the knitwear industry, bicycle spokes, etc. The labor productivity on the automatic and semi-automatic lines is 5-10 times higher than for universal machine-tools, and in some cases even 20 times higher. The use of automatic lines allows approximately parallel increase in labor productivity, and in some cases production costs of certain articles decrease by 20-25% and more. Of great importance in automation of machine-tool equipment is the utilization of copying tools, means of active control and programmed operation.

During the years of the Fifth and Sixth Five-Year Plans particularly serious attention has been given to increasing production of the most powerful, unique big and heavy and precision machine tools. On the heavy turning lathes details up to four meters in diameter and 32 meters long can be worked on the vertical boring and turning machine; details with a diameter of up to 20 meters on the special milling machines; the cylindrical rack-wheels with diameter up to five meters, and on the longitudinal planing and milling machines details up to four meters in width and up to 12 meters in length, etc. By dimensions the articles worked on these machine-tools are almost on the same level with the most powerful machine-tools of the US and the German Federal Republic. In 1940 the USSR manufactured only seven types and sizes of precision tools; by 1955 105 types and sizes of such machine-tools were mastered and manufactured.

In connection with the growth of the output of machine-tools and improvement of their quality the USSR is exporting them on a growing scale. While before the October Revolution in Russia three times less machine-tools were manufactured than were imported, in the recent years our country has been exporting a considerable number of machine-tools to the people's democracies and to the capitalist countries, and not only to the industrially undeveloped countries —India, Egypt, Syria, Lebanon, Burma, Iran, Afghanistan, Turkey—but also to such developed countries as Belgium, Austria and Denmark, and also to the countries of Latin America.

One of the basic means for the further technical development of machine-building is increasing the scales and raising the technical level of working by pressure. This method of work is much more productive than by cutting. From 1932 to 1955 the production of equipment made by forge-hammers (presses) increased almost 20 times, while the output of articles made by metal-cutting machine-tools increased only six times. Particularly great improvements in manufacturing equipment by forge-hammers (presses) occurred in the postwar period. The assortment of this output already includes 300 types and sizes, and during the Sixth Five-Year Plan it must be increased to 500 types and sizes. During recent years the production of powerful and precise equipment made by the forge-hammer process has increased constantly. We started mastering production of highly-efficient presses (with cranks), mechanical punching presses, forging machines with electric welding, automatic punchers and high-power presses. For instance, the Novo-Kramatorsk plant mastered production of crank-punching presses with 4,000- and 6,300-ton pressures and is getting ready to manufacture a press with 8,000-ton pressure. The Urals machine-building plant transferred to production of super-power presses with 30,000 to 50,000 and more tons pressure. Thanks to the use of these presses in production of big forgings, the coefficient of utilization of metal has increased from 0.10-0.15 to 0.6-0.8, along with a sharp decrease in additional mechanical working. As a result, the expenses of manufacturing these super-powerful presses are compensated in less than a year.

Great successes have been achieved in raising the technical level of energetics. The greatest capacity of a stationary turbine manufactured before 1916 was 1,250 kilowatts, with an initial steam parameter of 12 atmospheres and 300° Centigrade. In 1926 the Leningrad metalworks began production of a turbine of 2,000 kilowatts capacity, and in 1929 the power of an aggregate was raised to 10,000 kilowatts. In 1930 an AK-25-1 turbine was manufactured of 24,000 kilowatts and 3,000 revolutions per minute with a steam parameter of 26 atmospheres and 375° Centigrade; in 1931 the AK-50-1 turbine of 50,000 kw. with 1,500 revolutions per minute and steam parameters of 29 atmospheres and 400° Centigrade. Later turbines of 100,000 and 150,000 kilowatts were mastered with even higher steam parameters. Now a 200,000-kilowatt turbine is being manufactured with steam parameters of 130 atmospheres and 565° Centigrade. In the near future we shall manufacture 300,000-kilowatt turbines with steam parameters of 200-300 atmospheres and 650° Centigrade, thereby achieving the US level in manufacturing turbines. Recently a project on a super-powerful turbine of 600,000 kilowatts was started.

The transition from the output of low-powered turbines to the manufacturing of turbines with high or super-high steam parameters secured a considerable increase in the technical and economic effectiveness of turbines in the production process, as well as in their own operation. The increase of turbine capacity from 2.5-4 thousand kilowatts to 100,000 kilowatts secured lowering of the amount of metal used in a turbine (per kw.) by five to seven times. Consequently, the labor needed for the manufacturing of turbines (per kw. capacity) decreased 12 times. A turbine with a capacity of 150,000 kilowatts and steam parameters of 170 atmospheres and 550° Centigrade is 11% more economical than a turbine of 100,000 kilowatts capacity and steam parameters of 90 atm. and 500° Centigrade. A turbine of 200,000 kilowatts capacity with steam parameters of 130 atmospheres and 565° C. is 6-9% more economical than a turbine of 150,000 kw. As a whole, modern turbines are 35-40% more economical than the earlier turbines of 25,000 kw. Thanks to the lower expenditure of fuel, modern high- and super-high-pressure turbines, although they cost considerably more than the earlier ones with regular or low pressure, are compensated in the shortest time.

Large-scale changes have occurred in the manufacturing of hydroturbines. In 1924 the Leningrad metalworks produced for the first time in our country two hydroturbines of 425 kilowatts capacity. In recent years turbines of 108,000 to 126,000 kilowatts capacity were produced for the Kuibyshev electric power station. A turbine of 200,000 kw. is planned for the Bratsk power station and one of 300,000 kw. for the Krasnoyarsk station. Along with the mastering of production of new types of turbines, the cost of their production is decreasing considerably. For instance, the cost at the works of the 17th hydroturbine for the Kuibyshev power station, manufactured in 1956, was almost one-half the cost of the first turbine, manufactured in the early part of 1954.

Soviet machine-building secured a great technical change in ferrous metallurgy—the main base of all industry and the national economy of the USSR as a whole. In 1928 the average payload of almost one half of the blast-furnaces did not amount to 200 cubic meters, and the average size of all these furnaces amounted to 290 cubic meters; only four blast-furnaces were of 600-700 cubic meters. In 1956

the average size of a blast-furnace was 743 cubic meters, and 26.5% of all blast-furnaces were more than 1,500 cubic meters each. The labor productivity of a completely mechanized blast-furnace is approximately ten times higher than on a small and non-mechanized furnace. The All-Union Institute for Planning Metallurgical Plants has recently designed a blast-furnace of 1,719 cubic meters volume and prepared a project for one of 2,286 cubic meters. The daily productivity of this blast-furnace is about 5,000 tons of pig-iron, i.e., almost five times more than the productivity of the first blast-furnaces produced at Magnitogorsk. The pay-load of the biggest blast-furnace blown in in the US in June, 1955, was 1,810 cubic meters. In our country there are a number of blooming mills and other rolling machines with an annual production capacity of 1.5 million tons of rolled metal. The recently-manufactured machines (continuously working on thin sheets and wire) are rolling metal at a speed of 1,300 meters per minute. The productivity on these machines is 20-25 times higher than the old ones. At the Urals machine-building plants a rolling machine is being designed with a speed of 2,240 meters per minute and another is planned for rolling wire at a speed of 3,600 meters per minute.

Our machine-building has achieved considerable successes in the field of mechanization and automation of production in the ferro-industry. In the majority of the basic shops of metallurgical enterprises in the past manual work had complete dominion. During recent years the share of mechanized work in these shops reached 80-100%. For instance, in the coal industry, where in 1913 only 1.7% of production was mechanized, the share of mechanized work on notching and hewing of coal, delivery and trucking and loading it on the railroad cars in 1955-1956 reached 99-100%. In the peat industry the proportions of mechanized work increased up to 60-100%; in the iron-ore industry (on delivery of the ore from the slope) up to 95%; in timber-cutting up to 89.6%; on bringing in the timber up to 78.7%; on carting it out up to 81.8%. Mechanization of excavation, mixing concrete and cement or other mixtures and pouring of concrete reached 60-90%.

The technical level and effectiveness of equipment used in the extractive industry are increasing constantly. More and more use is made of coal-combines and coal-cutters and coal-loading machines which increase the miners' labor productivity in the drift by 50-70%, and also of more highly perfected conveyors of high productivity, as well as of coal- and ore-loading machines and combines that greatly speed preparatory work. At present a number of new, more perfect systems of complex mechanization of refinement slopes are in different stages of design, production and utilization, as are complexes of combines with mechanized conveyors and mechanized propping, which increase labor productivity by 30-50%. New powerful tractors and trucks are being used extensively in timber-cutting which increase production per machine and per worker by 2-3 times, and also various complex aggregate machines (felling-and-dragging-up, felling-and-loading, loading-and-hauling) which increase the workers' output 3-4 times. In construction and mining new machines are in use: three-cubic-meter excavators, which replace 150 workers and increase the workers' labor productivity 30 times; walking-excavators with buckets of 14 cubic meters capacity, which do the work of 7,000 to 10,000 workers and increase labor productivity hundreds of times; the newest walking-excavators, with 25-cubic-meter buckets (excavators with buckets of 50 cubic meters capacity are planned); dredge-excavators, replacing up to 5,000 workers; tractor-scrapers with buckets of 6, 10 and 15 cubic meters capacity; automatic dump trucks with capacities of 10, 25 and 40 tons; dump-cars; powerful bulldozers, multi-bucket excavators, automatic concrete-mixers producing from 4,000 or 5,000 to up to 20,000 tons of concrete per day, etc.

This new technology is characterized by high power and effectiveness, by easier and automated operation, lower metal need for the equipment, and lower consumption of fuel. Now work is being done to further perfect this sytem of equipment, create new and more perfect techniques (replacing mechanisms with interrupted action by mechanisms operating uninterruptedly, changing their methods of operation, etc.).

On the basis of the successes in domestic machine-building elements for future automatic operation of machines in all branches of industry and construction are being created and gradually spreading: completely automated hydroelectric power stations; highly automated thermal electric power stations; automated control of electric circuits, oil pipelines and gas mains; automatic systems for thermal power and gas enterprises, etc. A considerable number of the oil refineries and chemical factories are already automated; automatic blast-furnace control systems and open-hearth furnaces and rolling-mills; there are automatic concrete factories, automatic bakeries are working; and elements of automation have been introduced in a number of food industry enterprises.

In the near future one may expect the creation (on the basis of automatic systems in factories and the steady flow of transport from outside to the factory) of regional systems of machines, as, for example, for coal supply on the following scheme: 1) complex mechanized extraction of coal and mechanized delivery of it to the bunker, or directly to the self-unloading cars; 2) dumping from the self-unloading cars to the bunker of the consumer-factory; 3) feeding the coal directly from the bunker to the concentrating mills, fire-chambers and the coke-firing and other furnaces.

For improving the technical level of the equipment of the light and food industries the Soviet machine-building industry is producing various machines, mechanisms and aggregates. The manufacturing of more than 3,000 different types of technological equipment for the light and food industries secured intensive renovation of equipment in these branches of industry. Highly efficient ribbon, spinning and other machines were introduced successfully in the cotton industry. Technical progress in this branch of industry followed the road of combining various processes (in particular loosening and scutching) on one machine, automation of weaving and creating a great number of new machines for new branches and productions; for instance, for the artificial fibers industry and for the knitting industry. By 1956 automatic weaving looms totaled 92% of the output of such looms. The number of spinning machines with apparatus of high stretching power reached 7.7 million spindles by 1956.

The sugar industry is outfitted with much automatic equipment ready for the transition to complex automation. In bread baking the making of dough is automated, work is being done to organize a completely automatic mechanical bakery; already mechanized and automated lines for small items (bagels) have been introduced. In the meat industry there is mechanized and automated production of sausages, frankfurters, canned meats, meat-balls, "pelmeni," etc. Automatic press and squeezing machines for extracting vegetable oils, automatic lines for washing bottles, bottling milk, beer and spirits and for sealing glass containers, etc., are in operation.

Our machine-building has armed agriculture with advanced modern technology. During the years of the Soviet regime the power capacity in agriculture increased almost five-fold in spite of the decrease in the number of draught animals.

particular, the power capacity of mechanical engines (tractors, combines, trucks, electric power plants) increased more than 500 times. Tractors and self-propelled agricultural machines mechanized plowing 98%, sowing 97%, harvesting grain crops 88%. The number of types of agricultural machines is steadily growing. During 1950-1955 from 53 to 87 new types of agricultural machines were created.

The technical level of transport was raised considerably. Locomotive capacity increased more than three times (from 900-1,000 hp. to 2,500-4,000 hp.). Transition to more economical traction—steam and electric—began; production of main-line locomotives was discontinued. By 1956 more than 17% of the entire freight turnover on the railroads was by the new types of traction. The load capacity of freight-cars increased more than three times—from 16 tons to 50-60 tons, and for some special cars up to 100 tons and more. The freight cars are now equipped with automatic coupling and continuous automatic brakes.

In the field of technical improvement of automotive transport considerable successes were also achieved. The construction of cars is being improved. The old 1.5-ton trucks are being replaced by 3-4 and 5-12 ton trucks; the technical and operational features of passenger cars are improved. A completely new model of passenger car is planned, the "ZIL-111," with an eight-cylinder, 200 hp. motor capable of 160 kilometers per hour; with automatic transmission, hydraulic steering and air conditioning. But, as a whole, Soviet automobile design is still behind the best models of US and other foreign cars.

Thanks to the rapid development of machine-building in the USSR, a number of branches of the newest technology are developing rapidly; atomic technology, making of instruments and apparatus, radio-technology, radioelectronics, the manufacture of high-speed calculating machines and of semiconductors, rocket and jet-propulsion techniques, ultrasound-wave technology, etc. Soviet machine-building, along with Soviet science, has entered a new technical era. Among the achievements of Soviet scientific thought and machine design one can single out a few which put our technology ahead of that abroad. These are: the first atomic electric power station; the world's largest installation for the study of the atom nucleus—the synchrophasotron; the atomic ice-breaker; high-speed jet-propelled and powerful turboprop airplanes; new turbo helicopters, the intercontinetnal rocket and the "sputniks," the world's first artificial earth satellites, created on its basis. All these great achievements became possible due to the high technical level of Soviet machine-building, in particular instrument manufacturing, radio-technology, electronics, automation, and other branches of the newest technology.

Soviet machine-building also advanced in another basic direction of technical progress—on the road to improving production technology.

In investigating the problem of the development of Soviet machine-building it is necessary to analyze properly all the aspects of the close relation between the improvement of the equipment and design of manufactured machines, on one hand, and perfection of technology, on the other. More perfect equipment assures more perfect technology, and vice versa. With more perfect technology it becomes possible and necessary to use more perfect equipment. But in the process of developing equipment and technology a lag of one or the other during certain periods is possible. For instance, during the early years of development of the USSR national economy, when it was necessary to master and introduce some new, previously unfamiliar foreign techniques and the most advanced foreign machines and equipment, for a number of years technology lagged behind this equipment, but then gradually caught up. In recent years the creation of new, more perfected technology is influencing the perfection of equipment more and more. Thus, in a number of cases the demands of a more advanced technology are taken into consideration in planning new metal-cutting tools, and are implemented in the new designs of equipment for machine-tools; the requirements of the technological process in utilizing atomic energy determine the characteristics of and the peculiarities of the equipment needed for it; the requirements of the technological process in precise casting determine the equipment needed for it, etc.

One of the main directions for perfecting technology is the intensification of technological processes and transition of machine-building toward more and more speedy and intensive work regimes. In this field Soviet machine-building has achieved considerable successes. Not long ago processes using cutting speeds of not more than 30-40 meters per minute were dominant; now cutting speeds are 100-300 meters per minute and in some cases even 2,000 to 3,000 per minute. At a number of enterprises from one-third to one-half of all the machine-tools work at high speeds. Under this method labor productivity increases from 1.5 to 3 times. In those cases when high speed is combined with an increase in feeding, mechanization and automation of auxiliary operations previously performed by hand, labor productivity increases ten times and more. The development of the high-speed method is closely tied to the introduction of new high-speed equipment and special hard-alloy instruments. Very often the development of high-speed methods demands that machine-tool manufacturers create high-speed machine-tools and more sturdy instruments.

Another main direction in perfecting technology is the change to increased concentration of operations, to multi-instrument, multi-position, multi-detail work; for this often increases labor productivity by many times.

Of decisive importance in improving technology in machine-building is increasing the precision of work at the sections producing semi-finished materials (smelting, forging, pressing), and in this connection raising their role in the production process. It means gradual conforming of the shapes and sizes of semi-finished articles to the final shapes and sizes of the details (parts), thereby considerably shortening the time of final machining; in many cases this results in a considerable rise in labor productivity. At present the perfecting and making more precise of technological methods at sections producing semi-finished materials is in process: methods such as casting, molding in chill molds and under pressure, centrifugally, in casings and smelting forms. The progressive methods of forging and pressing—precision punching, cold upsetting, drawing, stamping, etc.—are more and more in use.

The perfection of technology means gradual selection of the best methods of mechanical treatment; replacement of certain technological methods by other, more effective ones; standardization of the technological processes; maximum replacement of cutting by casting and punching; replacement of certain methods of cutting by others (planing by milling; boring by turning-lathe work, etc.). In many cases labor productivity is considerably increased in this process. For instance, by applying the best methods of working using turning lathes labor productivity increases four to six times; by replacing one method of mechanical treatment by another (for instance of boring by work on turning lathes) four to five times. In some cases labor productivity increases by hundreds of times.

Another important direction of perfecting technology is complex reconstruction of technology and of production or-

ganization. This reconstruction, carried out at some plants, consists of simultaneous and coordinated perfection of designs of machines and their parts, of technology and of the organization of production in the purveying, mechanical and assembly shops. In three to four years it secures an output increase of five to six times and lowers the amount of labor required and the cost of production by two to three times.

The development of technology is closely tied to the improvement in organization and raising the level of specialization and cooperation in machine-building. Soviet machine-building is proceeding on the road of considerable extension of large-scale series production and of mass production, creation of certain branches which easily incorporate continuous belt-line production (automobiles, tractors, etc.), spreading of conveyor methods to the branches of small-scale series production, introduction of the series method in individual production, organization of specialized sections reserved for certain articles, improvement of servicing the main production by auxiliary shops and individual workers, etc.

Our machine-building has also achieved great successes in raising the level of specialization and cooperation. In prerevolutionary Russia there were no specialized machine-building plants; there were only the universal foundries and mechanical plants, producing various metal articles of different assortments—various castings and forgings, locomotives, agricultural machinery and small-scale metal articles. Soviet machine-building now has large-scale specialized plants — automobile, tractor (with an output of two and three models of machines), machine-tool building (manufacturing one or two types of tools), narrowly specialized plants for mass producing one type of detail (ball-bearings, tractor parts, electric equipment for automobiles, etc.), instruments and metalware. In prerevolutionary Russia there were only a few more-or-less formed branches (locomotive and railroad cars, agricultural machines, power and electrical machines, industrial machines, and shipbuilding). Now in our machine-building there are tens of specialized branches of machine-building. But the level of specialization and cooperation between machine-building enterprises still is not sufficient.

The outstanding achievements of Soviet machine-building would be impossible without the highly productive work of the great army of highly qualified workers. In 1913 there were only 510,000 workers in the machine-building and metalworking industries. During the 40 years of Soviet rule, the number of workers in this branch of industry increased by 8.9 times. The higher qualifications of these cadres, the gradual perfection of equipment and technology, and dissemination of the most advanced experience secured a growth in labor productivity in machine-building of about 22 times since 1913.

In the process of developing machine-building there occurred significant changes also in the territorial distribution of this branch of industry. In prerevolutionary Russia more than 85% of machine-building production was concentrated in the central, northwestern and Ukrainian regions and only some 15% in the eastern regions of the country, which constitute four-fifths of USSR territory. At present about one-third of the total output of machine-building is produced in the eastern regions. And in some of the eastern regions (the Urals, the Volga region, Western Siberia) the production of machine-building industry is much larger than it was in all of prerevolutionary Russia. A number of branches of machine-building in these regions (heavy machines, power, electric machines, trucks and tractors, machine-tools, etc.) are of decisive importance for technical progress. The changes in the distribution of machine-building testify to the higher technical level of the national economy not only in the eastern regions but over the entire country, and to the enormous growth of the economic might of our country. These changes in location create the necessary conditions for the further successful mastering of the natural resources of the eastern regions, for the intensive development of the productive forces of the Soviet Union.

During 40 years Soviet machine-building achieved a very high technical level. As machine-building expands and improves, new and more complicated problems arise before it. USSR machine-building must in the shortest time overtake the US in the scale and level of development of production of machine-tools, turbine, electric and power machines. Therefore these branches will develop at particularly high rates and produce equipment of higher and higher parameters and effectiveness. The proportion of the most advanced and effective equipment in the machine-tool industry will grow considerably. The output of the automatic equipment for machine-tools should be considerably increased, especially for automatic and semi-automatic lines in machine-building and machine-working branches. It is necessary to accelerate by every means the extension of forge-press and casting equipment and to speed up the creation of systems of highly powerful and precise machines for increasing the productivity and precision of preliminary processes. Along with this, the production of equipment should be developed at a high tempo for the branches of national economy which have to be especially rapidly developed in the near future; first of all for the chemical, oil and gas industries, and also for ferrous and non-ferrous metallurgy. The planned scale of chemical development demands the creation of systems of perfected machines for different branches of the chemical industry.

Soviet machine-building must secure the accelerated advance of all branches of the national economy to a more complete complex mechanization of production, and this requires further perfection of the system of mechanization. The development of transport demands greater output of powerful high-speed electric locomotives and motor-locomotives, creation of gas turbo-locomotives and especially a considerable increase in the rate of perfecting designs of automobiles, trucks, etc. It is very important to accelerate the transition to the production of more efficient complex and aggregate machines (for the coal, timber, machine-building and other branches of industry). An exceptionally responsible task in the field of machine-building is also the further perfection of technology and transition to more effective and highly productive technological processes on the basis of their standardization.

Equipped with advanced technology, Soviet machine-building is entering a new era—of atomic, reactive and other new techniques—and is becoming the technical base necessary for the gradual transition from socialism to communism.

M. Dmitriev:

Some Problems of Accounting Control in Industrial Enterprises

The successful solution of problems of communist construction is unthinkable without a unified system of accounting and statistics in the USSR national economy. Organization of strict nation-wide accounting and control over the distribution of products is one of the important conditions for the scientific management of the national economy. Bookkeeping plays a great role in a unified socialist accounting. Marx noted that under conditions of social production bookkeeping becomes more important than ever before.*

Continuous bookkeeping accounts are kept at industrial enterprises of all their funds and resources, as well as of all economic operations. Along with this preliminary, current and consecutive control is exercised over the correctness and expediency of the economic operations. Through continuous observation and documentary substantiation the bookkeeping accounts reflect and control (using monetary and natural indices) the safety of funds and fulfillment of plans by enterprises, institutions and organizations. They represent an efficient means of strengthening state order in the accounting of monetary funds, commodities and property, preventing illegal expenditure, strengthening self-support and observance of the regime of economy. The indices for economic councils, ministries and departments are available through summaries and generalizations.

The importance of bookkeeping accounts is especially great in fulfilling the tasks put by the 20th USSR Party Congress and by the plenums of the CC of the CP of the USSR which followed.

But there are still serious defects in bookkeeping and accounting. The principal direction for further improving bookkeeping and accounting are: liquidation of the lag of theoretical work behind practice, behind the needs of construction of communism—in particular intensification of scientific research; improvement of the training and retraining of cadres of economist-bookkeepers; further perfection of bookkeeping control and economic analysis; elimination of serious defects in the field of departmental control, initial accounting and calculation of production costs; sharp improvement of mechanization of accounting; organization of exchanges of experience and study of the more advanced foreign practice.

It is necessary to intensify research work in the field of working out the problems of rationalization, shortening and simplifying of accounting and reporting at enterprises and in the branches of the national economy, of the methods of calculating the cost of production, the structure and content of bookkeeping balances, methods of economic analysis of the work of enterprises and branches of the national economy, methods of preliminary and consecutive control. One of the basic problems of the research work in the field of bookkeeping accounts is working out problems in mechanization of accounting. The problems of scientific work in the field of bookkeeping and accounting cannot be solved without the participation of the USSR Ministry of Finance, the USSR Central Statistical Administration, the Soviet Control Commission of the USSR Council of Ministers, the departments of accounting and statistics in institutions of higher learning, the research institutes of different branches, and also of broad circles of those who work on bookkeeping and accounting in the enterprises and economic councils. In our opinion, a special institute for research on accounting should be created in the USSR Academy of Sciences.

It is necessary to take certain measures for training scientific cadres and bookkeeping specialists. At present the training of highly-qualified economist-bookkeepers sharply lags behind the requirements of the national economy. Most of the chief accountants of the economic councils and even of the major enterprises did not graduate from special higher education institutions; the number of workers in this field in the economic councils and at enterprises who have higher education is less than 2% of the total. The training of bookkeeper-economists for industrial enterprises is especially inadequate. The specialists graduated from the departments of accounting of higher educational institutions in most cases are not appointed to the bookkeeping apparatus, mostly because of the low level of their training. Considerable defects also exist in the training of middle-grade bookkeepers.

Practice shows that the economist-bookkeeper must possess a broad economic mental outlook; know well the theory and practice of bookkeeping and accounting, the economics, organization and technology of that branch of the national economy or enterprise for which he is keeping accounts and exercising control. This type of training resembles the training of specialists graduating from engineering-economic institutes and special departments and must use the same base. It is imperative to organize special institutes for training bookkeeper-economists, especially for industry, agriculture and trade; also special departments or sections at engineering-economic institutes and similar departments at the special institutes of different branches of industry should be organized. Long-term courses for training and refresher training of chief accountants and bookkeeper-inspectors for industry should also be organized.

In connection with the reorganization of the management of industry and construction it became imminently necessary to immediately revise the syllabuses and curricula of institutions of higher learning and technicums. At many enterprises and in economic councils economic analysis is not practiced and, as a result, bookkeeping control is very limited.

The problems of strengthening consecutive control are indissolubly connected with the problems of preliminary control. At present it is particularly important to strengthen the preliminary bookkeeping control over the principal problem of fulfilling the tasks set by the state. At the same time it is becoming possible to relieve enterprises of petty tutelage, in particular petty preliminary control; these complicate the work of the enterprise and deprive the administrative managerial personnel of responsibility of the legality and expediency of their orders on performing one or another operation.

It is high time to regulate the periods of accountability and conduct a thorough economic analysis of the work of

* See K. Marx, "Capital," Vol. III, 1954, p. 865.

enterprises. Of great importance is the structure of the forms of accounts in conformity with the requirements of the economic analysis of the work of the enterprises (complex grouping of indices) as well as the delimiting of the material included in the accounts; current and annual accounts, bookkeeping and statistical reports, elimination of duplications and establishing the proper place for every type of account in the general system of control over the fulfillment of the national economic plans. The role of the annual report, as the basis for the evaluation of the work of enterprises and their management, should be stressed, as well as the analysis of the annual reports when approving them in the economic councils and ministries.

There are serious defects in the organization and realization of inner departmental control and inspection of documents. As a rule, the inspectors in the ministries and administrations had no special training or education and no systematic training was practiced. Inspections, in essence, were performed by one inspector or someone taking his place. Complex inspections and inspections with staff participation were carried out very seldom; sometimes the inspection was performed not by inspectors but by bookkeepers of other enterprises. The range of economic operations which was inspected is very narrow. The inspections of the utilization of materials and wage funds in the process of production were performed at a low level. The proposals for elimination of defects revealed by the inspection of documents in most cases were general and their implementation was not controlled. Cases of serious infringements of financial and calculating methods and bad management were not always documented; the real culprits were not established, nor was the size of the loss determined. These defects are being eliminated slowly by the economic councils which, as a rule, have a limited and insufficiently qualified inspection apparatus.

During recent years some measures were taken for mechanization of accounting and rationalization of its technique. The number of calculating machines at enterprises increased considerably and continues to increase, and therefore the time needed for accounting is being systematically shortened, and the possibilities for analytical work and inspection are increasing. Many enterprises achieved sharp qualitative improvement in accounting by taking measures for mechanization along with cutting the number of accounting workers. Calculating machine sections at many enterprises are preparing, with the help of analytic-computers, the necessary data on production output, expenditure of materials, determining of wages and utilization of equipment. The analytic-computors work out indices which are needed for the detailed analysis of the work of shops and production sectors. This permits considerably cutting the time for inner and outer accounting and improving its quality. At the Kalinin machine-building plant in Podolsk, where complex mechanization of accounting is almost complete, the number of workers occupied in bookkeeping and accounting, including those working on machines, is less than 1% of the total labor force. At the Moscow transformer plant more than 60% of all accounting work is done on calculating machines, not including filling out the initial documentation. In the entire Moscow Economic Council there are over 50 computor stations and 80 such bureaus. Almost one half of the computer stations are large or medium-size. At the medium-size stations there are four to six complete sets of computers, and at the large-size stations seven and more. The mechanization of accounting opens broad possibilities for improving the quality of the analysis of enterprises' economic activity; consequently it serves to increase the influence of bookkeeping in strengthening self-support and the regime of economy in socialist industry.

Nonetheless, in the field of mechanization of accounting there are still a number of serious defects. The level of mechanization in Moscow enterprises is uneven: at some enterprises eight topics are mechanized, while at some others only two or three are. Electronic computers are not used at all in accounting; the proper construction of them is still not worked out, and the conditions and cases of their most effective use are not studied. At the majority of industrial enterprises the technique of drawing up and working up the initial documents on accounting and reporting remains on a low level. As a rule, the initial documents are drawn up at the shops by hand. At some enterprises the calculating machines are not utilized for long time periods. For instance, at the Klin cellulose combine two complete sets of 80-column analytic-computer machines and several keyboard adding machines remained unused. The organization of the calculating-machine section was delayed at that combine for lack of proper premises. The defects in the field of mechanization of accounting at enterprises result in maintaining excessive staffs of accounting personnel and lowering the quality of accounting.

For speeding and improving the mechanization of accounting there are required: further extension and reduction of production costs of calculating machines, raising the output of spare parts for them and improving repairs. Series production of the simplest instruments and devices should be organized for mechanization of initial accounting and calculation. The network of computer stations and bureaus at enterprises should be expanded; utilization of the existing computers should be improved; complex mechanization accounting should be carried out at enterprises; the exchange of the foremost experience in this field should be effected and widely disseminated. The formation of economic councils allows for the organization of regional and group computer stations for processing initial documentation at industrial enterprises. The technique of operation used at the regional computer-machine stations of the USSR Central Statistical Administration should be applied. The personnel of these stations could instruct the accounting workers at industrial enterprises in the use of these machines. Thus, for instance, the Moscow District Economic Council, utilizing the reserves of the calculating machines which are at the enterprises, started work on organizing group computer stations. The computer station at the Ukhtomsk farm machinery factory at Lubertzy has five complete sets of analytic-computer machines and 31 keyboard adding machines. The analytic-computer machines at that station are used up to 60-65%, and the keyboard machines up to 50-55%. By rationalizing their work these machines could be used even less, leaving considerable reserves. At the same time other industrial enterprises in the region of Lubertzy have practically no calculating machines, and all accounting work is done by hand. The Moscow District Economic Council decided to reorganize the computer-machine station of the Lubertzy factory into a group station to serve four enterprises. Similar measures are taken at the enterprises located in Podolsk, Mytishchi, Serpukhov, etc.

Improvement in record keeping and calculating production costs, as well as strengthening economic accounting at the enterprise, requires putting in order its weighing and measuring equipment and its warehouses. It also requires supplying the shops with sufficient weighing and measuring apparatus, as well as carrying out systematic and planned work for further supplying all sections of the enterprises with such apparatus. It is also urgently necessary to

sharply improve and shorten initial accounting at enterprises and to perfect the calculation of production costs.

As analysis of the former practice shows, the industrial ministries excessively limited the system of accounting by various diagrams and forms, resulting in stereotyping and narrowing the effectiveness of accounting and negatively affecting the management of economic activity of enterprises and branches of the national economy. These defects, resulting from the existence of departmental "partitions" under the old system of management, is seriously complicating the present work of the economic councils. The examination of bookkeeping conditions at enterprises of different branches of industry shows that at many stages of accounting, especially in keeping records of production, calculating production costs, keeping records of basic means, materials, labor and wages, considerable discrepancies exist which are not connected with the specific peculiarities of the enterprises, but result from differences in accounting methods among the former industrial ministries. For instance, the Moscow machine-building plants were under 12 ministries, every one of which worked out its own methodology of bookkeeping, accounting and reports. As a result, a great lack of coordination existed in the methodology of keeping records of production and calculating production costs, in the methods of control over expenditures on production and in forms of initial documentation.

When studying the reports of the Moscow District Economic Council, it was discovered that many enterprises keep records by different methods and on different, often specialized rather than standard, forms, and not following their specific character. This results in incomparability of the indices of industrial enterprises, complicates the summing up of bookkeeping records and hinders the correct organization of economic analysis. The economic councils now face the great task of liquidating the difference in bookkeeping methods at enterprises which were handed down by the old system of management of socialist industry.

The progressiveness and merits of each bookkeeping method must be determined first of all by the degree of its influence on the strengthening of economic self-support and of the regime of economy, by its role in the struggle for realization of technical progress and other tasks put by the Party and the Government before industry. Certainly, one should not underestimate the importance of the degree of unification of the forms of initial documentation (with different variants for types and sizes of enterprises) in an attempt to hasten the introduction of more advanced methods of keeping records (this was especially important when the exchange of advanced experience had not been arranged). But it is necessary to make sure that initial documentation corresponds to the specific character of enterprises and branches of the national economy. The essential defect of the unification introduced by the former industrial ministries was that it did not completely reflect the requirements of mechanization of accounting but rather was oriented basically to the preparation and processing of the initial documents by hand. As the result of this, even at the enterprises where all stages of accounting were already mechanized, more than half of all accounting work is performed by hand.

The correctness of keeping initial records at enterprises is inseparably connected with the proper normalization of the expenditures on production and stocks at hand, as well as with the organization of production. At present there are serious defects in norm setting at enterprises, especially in the field of mormalization of labor and wages. Further improvement of accounting and control over the fulfillment of norms of expenditures on manufacturing the product and the norms of the stock of raw and other materials is directly tied to taking proper measures for improving the normative side of the enterprise. Purely formal control with clearly ineffective norms results in a flood of various documents signaling deviations from the norms, and only diverts the engineers, technicians and accountants from their regular work. One must also note that the system of calculating the cost of industrial production is unnecessarily complicated. The methods for allotting indirect expenses between semi-finished and completely finished products, as well as between various grades and types of products in some branches of industry—in particular machine-building—are so imperfect that to a considerable extent they depreciate the value of the data received at the end of this work. The difficulties which arise in utilizing the indices for evaluating the fulfillment of the tasks of lowering production costs (especially at enterprises where a diversified and changing assortment of products are manufactured) are intensified as the result of applying extremely complex and conditional methods in calculating those indices. The shops' expenditures are grouped by two indices: 1) the expenditures which appertain to the given shops because of the nature of their part in production are charged against these shops; 2) the expenditures which could not be clearly considered as appertaining to the shops where the basic or auxiliary production is performed are considered as indirect expenses; they are alloted by the established method, corresponding to the specific peculiarities of the branches of industry and types of production, in particular to the peculiarities of the organization of production (conveyors, automation, specialization, etc.). Expenses on maintenance and operation of equipment have to be charged to the cost of production of separate kinds and types of products which are produced by these shops in proportion to the hours of work of machines and equipment on the basis of estimated expenditures per hour of work of different groups of equipment, or in proportion to the time spent by the workers, calculated in normative or physical hours, or in proportion to other natural indices. In the branches of industry producing a product uniform in character and processing the expenses of servicing the production and management and the products remaining unfinished could be charged to the cost of that part of production manufactured for the market, or it could be charged to the cost of production of separate grades (types) of products in proportion to the basic wages of the workers occupied in this production (without the additional payments under the bonus system). The more the methods of allocation of expenditures of the shops correspond to the specific characteristics of production organization in given enterprises, the more correctly are their indices used for economic analysis for strengthening economic self-support at the enterprises and for intensifying the struggle for a regime of economy.

At enterprises with individual production characteristics, for instance, the expenditures on different orders (articles) are distributed in proportion to basic wages of the workers occupied in this production, without additional payments on the progressive-bonus system. At enterprises manufacturing a uniform product under the same organization of production (mass production, series production, large-scale or middle-scale or individual production), the expenditures of the shops are charged to the shops but distributed among the separate orders for the plant or factory as a whole. At the enterprises where a part of the product is manufactured in shops with limited cycles of production by large-scale series and part of the product is manufactured individually or by small-scale series, the expenditures of the shops are distributed between the orders for articles produced in

large-scale series and on an individual basis (according to the basic wages of the workers occupied in these operations, without additional payments on the progressive bonuses). For the cost of production of articles completely rejected as defective, the expenditures of the shops are included in proportion to the percentage established in the technical-financial plans of production or in the estimates. At the enterprises where consumer goods are produced completely or partially from waste and not in the shops specializing in consumer goods, or if some of the operations for the shop producing consumer goods are performed by other shops, the expenditures of the shops are included in the cost of production of consumer goods in percentages established by the technical-financial production plan.

At automobile plants the expenditures of the shops for different types of production are distributed in proportion to the basic normalized wages of the workers occupied in these shops. The expenditures of each shop are charged to the product manufactured by the given shop. In the shops where a new article is manufactured along with the regular product, the sum of the normalized wages of those who are occupied in manufacturing the new article is lowered according to the change in the amount of additional labor required for the new article while its production is not yet mastered.

The expenditures of the shops for unfinished production are accounted according to their actual level in relation to the normalized wages of the workers occupied in production, but not above the amount foreseen in the plan. The excess of the actual level of shop expenditures over the plan is charged to that part of the production intended for the market.

In our opinion, the distribution of the expenditures of the shops in proportion to the wages of the workers distorts the cost of production of the different types of products and complicates economic analysis; this is especially true of enterprises with different degrees of mechanization and automation of various production processes. It is known that along with automation the wages per unit decrease while the expenditures for power, current repairs and amortization of equipment increase. But when the expenditures of the shops are distributed in proportion to the wages of the workers occupied in production, there is an artificial lowering in the same proportion with the wages of all the expenses of maintenance and operation of equipment. Therefore, under such conditions the necessity arises of applying methods for distributing shop expenditures which do not distort but correctly reflect their phase in the given type of production; and this can be achieved by establishing economically substantiated coefficients of distribution of overhead expenses.

For the enterprises and branches of industry with complex assortments of products and changeable correlations between finished and unfinished production, it would be expedient, in our opinion, to lengthen the periods of calculation, considering the length of the production cycles and the system for starting production. In this case particularly it is necessary to change from monthly periods of calculation by grades (types, articles) to quarterly periods, with simplified calculations; and then to annual calculations (by grades, types, etc.), applying the most exact systems of distribution of expenditures between finished products and incomplete production, as well as between grades (types and articles) of production. Overhead expenses at enterprises with a constant assortment of product and a short production cycle should not be included, because this requires complicated and cumbersome monthly calculations and is not economically justified. At enterprises with long production cycles and changing assortments of products overhead expenses could be distributed between finished and unfinished production in accordance with the norms of labor needed and time of machining in manufacturing the product.

The experience of several Moscow electrical industry plants is interesting: since 1957 they have determined every month the cost of producing the output of the entire plant and of the principal articles, the assortment of which is established by the management, while once a year they determine the actual cost of production of other articles.

At machine-building and metallurgical plants there are shops which manufacture special instruments (tools) and devices; in many cases, with proper specialization of their machine-tools, they also produce instruments for general use. The tool-making shops which produce special tools and devices use the individual method while the series method is used for the production of instruments of general use. The expenditures on production are grouped and accounted either by individual orders or by different series of tools, and the cost of the manufactured instruments is determined accordingly. In case of a large assortment of the manufactured products, and rather small production of them, when it is not economically expedient to organize special accounting of the expenditures on each type of instrument and simultaneously prepare the preliminary documentation, simplified methods could be used to determine the value of the instruments manufactured by the shop, reducing it to average units of calculation. The necessary coefficients could be established either on the basis of the prices of instruments listed in the price catalogue or on the norms of labor required for production (output norms).

The experience of advanced enterprises shows the expediency in belt-line production of placing parts and groups of parts on the assembly conveyor without documents, especially from the machine shops. At enterprises using series production it is efficient to convey complete sets of parts from one shop to another labelled with documents recording the sets or groups of parts.

Great possibilities for simplifying the documentation at industrial enterprises exist in improving accounting of piece-work and calculating payment by the piece. For instance, after machine-building and construction enterprises formulate the task of the worker and calculate the output of the piece-worker, they usually issue appropriate orders. But at a number of enterprises this system is extremely complicated: the order includes numerous requisites, signatures of those who give instructions and those who execute control. The specificity of the orders and their number increase with the increase in number of production norms. At some machine-building plants hundreds of thousands of orders are issued every month. Accounting of actual work time by initial documents (orders) is expedient only when recording workers' and employees' working times by using time clocks is impossible. One of the methods of cutting the number of initial documents for determing wages is replacing orders issued for separate operations (work) by summary orders for five or ten days, etc. When work on belt-lines and conveyors is organized by brigade, the method of determining the wage sum for the brigade based on the number of articles received after the last operation is quite effective.

In series production the calculation of output according to routing lists and reports on output and acceptance of work performed during the shift is very important. The system of calculating output per piece-worker and wages according to routing lists is widely used at machine-building plants. It facilitates acceptance of the work accomplished by the piece-worker according to quality and quantity and simplifies the acceptance of completed work. Under the system o

accounting for work output per worker by routing lists better conditions for control over safe-keeping of parts (details) are created; control over correct application of time and rate norms for piece-work is facilitated and the number of initial documents is cut; at the same time a more uniform load for the computer stations and the accounting section of the bookkeeping apparatus of enterprises is secured.

Of considerable interest also is the system of accounting for output production without orders, which is being tested at a number of machine-building enterprises. As the practice of many plants shows, the number of orders can be cut considerably by extending the use of reports per shift and issuing monthly orders. For instance, in several shops at electric machine building plants the tasks assigned a shift are combined with the working orders by issuing a single document for that shift: "the task for the shift—report." At a number of machine-building plants when the operation concerns one order and has to be accomplished by the same people, several transitions or operations can be entered in one and the same working order. For long-cycle operations the working orders are issued by stages, if independent norms and rates exist. In such cases the working orders are issued only for those operations which are foreseen in the technological processes, while all other operations are entered on separate cards for additional pay.

The experience of some light industry enterprises shows that special cards or books in which the orders and results of work are entered daily simplify accounting and charging of wages. Such cards or books could be issued in duplicates, of which one would be for the worker. The date entered in these documents on wages and deductions could replace the data in the workers' pay-books and thereby simplify the technique of accounting in the calculating sections of enterprises' bookkeeping departments.

There are great possibilities for improving and simplifying material accounting at enterprises. In our trade, for instance, those who are responsible for the material side report and control not by article and grade of the goods received but by the value of the balance remaining at the time of inventory. The same principle could be used at industrial enterprises. At some enterprises the so-called "Saldo method" for accounting of materials is used, which allows (with some additional work) combining individual accounting of some materials with accounting of the rest in summary. A considerable simplification of accounting could be achieved through maximum reduction of the nomenclature according to which quantitative-monetary records are kept. The price-lists for wholesale prices also should be simplified. In particular, it is expedient to use more extensively the valuation of enterprises' materials by the suppliers' wholesale prices, and to distribute expenses for transport and purveyance by simplified methods.

The possibility of further simplification of material accounting depends to a great extent on improving the organization of material-technical supply and storing facilities at enterprises, as well as on raising the qualifications of the storekeepers and other materially responsible persons at enterprises. Considerable help could be rendered in this field by mechanizing accounting. For instance, at enterprises which have computer stations it is expedient to follow the experience of a number of electrical machine-building plants where no receiving orders are issued on receipt of materials but the appropriate documents are stamped and signed by the storekeeper.

Our economic literature has noted repeatedly that there are basic defects in accounting of basic funds and their amortization, and also in accounting utilization of enterprises' productive power. Working out measures for improving accounting for the utilization of basic means and raising the quality of bookkeeping-control in this field would promote technical progress in our enterprises. It is especially important to work out the problem of a system of control over utilization of production equipment by the branches of industry, in particular at machine-building plants and their shops. The existing system of recording utilization of equipment by machine-building plants does not meet the requirements of economic analysis and complicates accounting for the utilization of equipment. The insufficient development of a method of accounting for idle equipment also affects the reliability of indices of utilization of equipment.

In the field of perfecting bookkeeping and accounting and reducing reports the study of advanced experience in our country and abroad has great importance. But such study is practically ignored. The economic councils and the USSR Ministry of Finance should seriously consider the problem of organizing exchange of experiences and collecting rationalization proposals in the field of bookkeeping and accounting. To some extent this will be promoted by the publication of "leaflets" concerning exchange of experience in the field of organization and mechanization of accounting and analysis of the economic activities of enterprises planned by several economic councils. But this is certainly not enough. Considering that the economic councils have inadequate staffs of qualified bookkeeping specialists it would be useful to restore and further extend the special economic self-support offices for organizing bookkeeping and accounting at enterprises; they could be charged with generalizing experience and introducing proper methods at enterprises which are backward in this respect. Such economic self-support offices could be formed at the largest economic councils. Of considerable help in this would be organization of pilot enterprises of different branches of industry, where bookkeeping and accounting specialists could learn by practice the advanced methods of this work. The work of the Moscow City Economic Council and a number of scientific institutions and schools in making experimental model enterprises of the Moscow small-cars plant, the First State Bearings Plant and the "Hammer and Sickle" factory deserves serious attention.

The Institute of Scientific-Technical Information and the magazine "Bookkeeping and Accounting" should play an important role in disseminating information concerning advanced experience at Soviet and foreign enterprises.

Socialist competition for raising the quality of bookkeeping, accounting and control and for intensifying their role in strengthening economic self-support and a regime of economy also should be utilized more widely.

The role of bookkeeping and accounting in strengthening the economic regime and economic self-support in socialist industry is undeniably great. The existing defects in bookkeeping and accounting should be eliminated as soon as possible.

V. Zolotarev, V. Pekshev:

Development of the Economy of the Federal People's Republic of Yugoslavia

Twelve years have passed since the moment when the Yugoslav toiling masses, under the leadership of the Union of Communists of Yugoslavia, liquidated the hated monarchical regime and formed the workers' and peasants' state — the Federal People's Republic of Yugoslavia. Having with the help of the Soviet Army liberated their Fatherland from Hitler's occupation, the peoples of Yugoslavia entered the road of socialist development.

***

Before the Second World War Yugoslavia was economically one of the most backward countries of Europe. According to the 1931 census, more than 76% of the gainfully-employed population were occupied in agriculture, which was very extensive and known for its low productivity. Industry was developing very slowly. Its principal branches were textiles, sewing and food-processing, and also mining. The metalworking industry was weak and produced only the simplest equipment.

The economic life of the country was dominated by foreign monopoly capital. In 1938 about 60% of the capital of the corporations of Yugoslavia belonged to foreigners; an enormous part of the profits, amounting to 35% of the entire value of Yugoslav export, was transferred abroad as interest and dividends on the capital invested by foreign monopolies. Foreign capital wielded especially great dominance in the mining industry, where it controlled the entire extraction of copper, lead-zinc ore and bauxites. The occupation of the country by the Hitler invaders inflicted much damage to the national economy.

The industrious Yugoslav people, relying on the assistance of the Soviet Union and the people's democracies of Central and Southeastern Europe, in a rather short time restored the most important branches of the country's economy — completing this in general by 1947 — and then began implementing the program of socialist industrialization.

In the post-war years the structure of Yugoslavia's national economy changed considerably. While in 1936-1939 almost 47.3% of the national income derived from agriculture and the share of industry was only 20%, in 1953-1956 the proportion of industry in the national income averaged 34.4%, and that of agriculture 32.2%. But one has to remember that the increase in the proportion of industry in the national income is due not only to the growth of industrial production but also to a considerable lag in the development of agriculture, in which about 60% of Yugoslavia's population is occupied.

By value of output industry is now the main branch of the country's national economy. According to the data for 1955, the total value of industrial production amounted to 1,500 billion dinars.(1) Some 9.4% of the total value of industrial production was from the branch of energetics (electric power, coal, oil); 9% from metallurgy; 18.3% from metalworking, including the electrotechnical and shipbuilding industries; 4.9% from building materials and extraction of non-metallic minerals; 9.6%, timber and paper; 5.3%, chemical products and rubber goods; 19.2%, textiles and leather footwear; 12.5%, the food industry.

The dynamics of the growth of industrial production is characterized by the following indices:

Index of Industrial Production (1939=100)(2)

	1950	1953	1954	1955	1956	1957
gross industrial production	172	183	208	242	266	311

The development of industry in Yugoslavia is dominated by the growth of means of production, which is secured by proper distribution of investments. During the post-war period up to 85% of the total investments in industry went into heavy industry. Among the branches of heavy industry the most rapid in developing were: metalworking, ferrous metallurgy, electric power production, and the chemical and oil industries, i.e. those branches which were the least developed in pre-war times. On the other hand, the tempo of growth of nonferrous metallurgy, coal and timber, i.e. branches which were more developed in the past, was not so rapid (see table on following page).

The indices in this table show that the output of industrial products rose quite considerably, especially in the branches of heavy industry. For instance, the production of electric power in 1957 was 5.3 times higher than the level of the pre-war year 1939. While before the war annual production of electric power was 72 kwh. per capita, in 1957 it increased to almost 350 kwh. By 1957 the output of coal and lignite increased more than 2.5 times compared with the pre-war period.

During the post-war years in Yugoslavia intensive prospecting for oil and gas was carried out. This has already produced some positive results. In 1957 oil output increased almost 2.7 times compared with 1951, and natural gas output more than three times. But still, in spite of these successes the development of the energetics base is lagging behind the rapidly growing demands of the national economy for electric power and liquid and hard fuels.

The production of ferrous metals increased considerably in Yugoslavia in the post-war years. In 1957 the smelting of pig-iron was approximately seven times higher than in the pre-war period, that of steel more than four times, and production of rolled metal 4.4 times.

Non-ferrous metallurgy is playing and important role in the economy of the country, especially the production of

(1) Seventy-five dinars equal one ruble.

(2) This index does not cover the military, shipbuilding and cinema industries.

Growth of Output of the Principal Types of Industrial Products.(3)

	units of measurement	1939	1953	1954	1955	1956	1957
Electric power	mil. kwh.	1,173	2,982	3,440	4,340	5,047	6,250
Coal	thousands tons	7,032	11,246	13,663	15,207	17,100	18,007
Oil	"	1.1	172	216	257	294	396
Steel	"	235	515	616	805	887	1,049
Rolled metal	"	151	320	411	494	553	664
Aluminum	"	1.8	2.8	3.5	11.5	14.7	18.1
Copper (blister)	"	42	31	30	28	29.4	33.7
Agricultural machines	"	1.8	8.3	8.7	13.1	14.7	17.9
Machine-tools	"	0.1	2.4	3.7	3.1	2.7	3.9
Trucks	pieces thousands	—	1,329	1,651	2,160	2,766	3,459
Electric machines	kwt.	4.3	292	232	202	314	426
Sulphuric acid	thous. tons	23	40	60	73	107	124
Cement	"	894	1,281	1,393	1,577	1,555	1,983
Cotton goods	mil. sq. mt.	111	129	106	174	183	207
Woolen goods	"	12	17	20	26	28	34
Sugar	thous. tons	108	172	132	117	148.7	219

copper, lead, aluminum and mercury, part of which is for export. The production of non-ferrous metals considerably increased, with the exception of blister-copper. The output of copper ores in Yugoslavia increased almost two times compared with the pre-war period, while the smelting of blister-copper in 1957 was only 80% of the 1939 level. This is explained by the preferential working in the early years of the post-war period of the richest deposits of copper ores, the result of which is that the average copper content of ores mined today is considerably lower than before the war. Thus, while the average copper content of ores extracted in Bore — the principal copper ore deposit in Yugoslavia — before the war was over 5%, now it is hardly 3%.

Great successes have been achieved in the metalworking industry, where in 1957 the output was more than five times higher than the pre-war level. But the machine-building plants constructed in recent years are not utilizing their capacity completely, partly due to the weakness of the raw-material and power base and partly because of the lack of orders.

Much attention is paid to ship-building. During the post-war years a number of new shipyards were built in Yugoslavia. By now building of large freighters of up to 10,000 tons' displacement has been mastered. A large number of ships are built for export. The capacity of the shipyards is above 60,000 tons gross weight per year and, according to the statements in the Yugoslav press, this capacity could be raised to up to 120,000 tons per year with comparatively small additional investments.

The electrification of the country is promoting the rapid development of the electrotechnical industry, which was actually founded in Yugoslavia after the war. Production of powerful generators, transformers, electrical apparatus and other equipment was mastered, as well as of many electrotechnical articles, which were not produced before. Production of passenger cars and tractors was started. The tractor plants of Yugoslavia are now producing 3,000 tractors a year, but this meets only a small part of agriculture's demands.

The Yugoslav press is pointing out that there are considerable disproportions in the development of industry, resulting mainly from the lag in the raw-material base and the disparity between the growth of production of means of production and of consumers' goods. According to official data, the output of means of production in 1957 was 11 times as high as in 1939, of raw materials 2.9 times, and of consumers' goods 2.9 times higher than in 1939.

Production output in the light and food industries is rising slowly. For instance, in 1957 the textile industry produced 99% more than in 1939, but compared with 1950 the output in this branch of industry was only 13% higher. In the leather footwear industry the level of production in 1957 was twice as high as in the pre-war years, but it was only 1.5% higher than in 1950.

The five-year plan outlined a considerable growth of the national economy. By 1961 the gross output of industrial products is to increase, compared with 1956, by 68%, i.e. on an average it will increase by 11% every year. The growth of output of the most important types of industrial production is envisaged in the five-year plan in the following amounts:(4)

	unit of measurement	1956	1961	1961 in % of 1956
Electric power	millions of kwh.	5,047	9,300	184
Coal	millions of tons	17.1	25.3	148
Oil	thousands of tons	294	850	289
Steel	"	887	1,370	154
Blister-copper	"	29.4	40.0	136
Aluminum	"	14.7	35.0	239
Cement	"	1,555	2,400	154
Tractors	pieces	2,961	6,450	218
Trucks	"	2,765	6,000	217
Agricultural machines	thousands of tons	14.7	38.3	260
Textile fabrics	millions of sq. meters	223	328.6	147
Footwear	millions of pairs	22.8	31.2	137
Sugar	thousands of tons	148.7	331	223

(3) "Index No. 2," Belgrade, 1958.

(4) "Sloujebni list," the Federal People's Republic of Yugoslavia, No. 53, 1957.

Capital investments in industry in 1961 are to amount to 187.4 billion dinars as against 167.4 in 1956, i.e. almost 12% more. The funds appropriated for the development of industry will be spent first of all for the construction of electric power stations, for increasing the output of coal and oil and developing non-ferrous metallurgy and some other branches, in consideration of the lag of the energetics and raw-material base which is preventing a more complete utilization of the capacity of machine-building and other branches of the manufacturing industry created in the post-war years.

One of the most important tasks, for the solution of which a beginning was laid by industrialization of the country, is the liquidation of the backwardness of economically undeveloped regions of Yugoslavia. While the volume of industrial production in more developed republics, such as Serbia, Croatia and Slovenia, increased by 1957 by 2.3-3 times compared with the pre-war level, in the formerly more backward republics this level was surpassed by a much larger degree: in Bosnia and Herzegovina by 3.9 times; Macedonia 5.5 times; and Montenegro 6.9 times. In 1957 the part of Bosnia and Herzegovina, Macedonia and Montenegro in the production of electric power amounted to almost 23%, while in 1939 it was only 11%. In the People's Republic of Bosnia and Herzegovina more coal is now produced than in Croatia and Slovenia together, while before the Second World War the output of coal in these two republics was twice as large as in Bosnia and Herzegovina. The five-year plan for the development of the national economy of Yugoslavia provides for a further rise of the economy of the republics of Montenegro, Macedonia and Bosnia-Herzegovina. In order to solve this task proper distribution of capital investments in the national republics is planned.

The improvement of work in Yugoslavia's industry is promoted by the work going on in the country to overcome the negative results of excessive decentralization of management of the national economy, which was manifested mainly in strong localism, disperson of construction, etc. The measures for increasing the state's role in the management of industry, finances and trade which were realized in recent years (creation of the Secretariat for Industry, State Secretariats for Finances and Trade, and the Committee for Foreign Trade), as well as the strengthening of control by the banks over the activities of enterprises, resulted, according to opinions expressed in the Yugoslav press, in curtailing localism to a certain extent and in increasing the responsibility of enterprises for fulfillment of the tasks of the state plan.

***

In contradistinction to industry, which in general was developing in the post-war period on the upgrade, agriculture in Yugoslavia was stagnant. Up to 1957 agricultural production did not surpass the pre-war level (1939), and in a number of years was even considerably lower than that level, especially in bad harvest years — 1952, 1954 and 1956 — when the grain harvest in Yugoslavia was 2 to 4 million tons lower than in 1939. The lag of agriculture was felt so much more because after the war, in connection with the growth of the population and industrialization of the country, the requirements in food and agricultural raw materials increased considerably.

The principal branch of agriculture in Yugoslavia is crop cultivation, and grain crops are dominant. In 1956-1957 some 53-58% of the gross production of agriculture derived from the cultivation of land. In the post-war years 5.1 to 5.5 million hectares were under grain crops, ie., 10-75% of all the arable land; 5-6% was under technical crops; and the remaining arable land was utilized for fodder and vegetables.

Harvests of the basic agricultural crops in Yugoslavia depend to a great extent on the climatogological conditions of the year and are subject to sharp fluctuations: (See the following table).

The Gross Harvest of the Basic Agricultural Crops(5)
(in thousands of tons)

	1939	1953	1954	1955	1956	1957
all grains	7,996	7,472	5,062	7,260	5,843	10,028
of this:						
wheat	2,910	2,513	1,387	2,430	1,600	3,100
rye	244	309	191	262	205	280
barley	424	458	253	390	344	604
oats	348	352	233	278	324	484
corn	4,070	3,840	3,004	3,900	3,370	5,560
technical crops						
of this:						
sugar beets	922	1,514	1,249	1,380	1,130	2,020
tobacco	17	30	29	41	31	56
hemp (fiber)	342	220	272	342	220	312
cotton (raw)	3.5	3	5	9	6	10
sunflower	27	113	125	102	59	90

Comparison of the average indices of the gross harvest of grain crops for the last five years before the war shows that the average yearly harvest of grain crops before the war (1935-1939), of approximately 800,000 to 850,000 tons, was higher than the average harvest during the years 1953-1957. One should keep in mind that the average index for the last five years includes the data for 1957. The considerable increase in agricultural production in 1957 was the result of favorable weather conditions and also of measures to improve agriculture which the state has been carrying out for a number of years (increasing personal material interest of peasants, increasing capital investments in agriculture, etc.). The 1957 harvest was a record not only for post-war, but also for pre-war Yugoslavia.

The decline of the grain crop harvests is explained by the fact that up to 1957 the area under grain and the crop capacity were considerably lower than before the war. In 1956, for instance, grain crops occupied 5.2 million hectares, and in 1939 5.9 million. The average crop capacity of wheat in 1952-1956 was over one centner less per hectare than in 1935-1939. An important over-all result of the development of agriculture was that by 1957 the area under grain crops was restored almost to the pre-war level and at the same time the crop capacity was increased. Large harvests of technical crops resulted from extending their sown area, though their crop capacity was somewhat lower than before the war.

By volume of gross production animal breeding occupies the second place in Yugoslav agriculture; it made up 25-35% of the gross agricultural production of the country.

Livestock and poultry (in thousands at the beginning of the year).(6)

	1931	1952	1953	1955	1956	1957
horses	1,333	1,103	1,126	1,242	1,296	1,307
cattle	4,883	4,834	5,007	5,285	5,206	4,947
sheep	12,291	10,522	11,404	11,970	11,360	10,622
pigs	5,042	3,999	4,527	4,780	4,655	3,725
poultry	19,939	20,440	19,665	24,839	25,938	25,992

(5) "Statistichki godishniak FNRY," Belgrade, 1957; "Borba" Jan. 9, 1958.
(6) "Statistichki godishniak FNRY," 1957.

The reduction of livestock (cattle, sheep and pigs) since 1956 is explained by the shortage of fodder due to a low harvest of corn for several years, and the comparatively high level of slaughter of animals to satisfy the needs of the population for meat and also for export.

The lag of agricultural production in the post-war years resulted in a number of serious difficulties for the entire national economy. The low grain harvests along with the growth of internal needs for grain resulted in transforming Yugoslavia from an exporter of grain, as it was in the pre-war period (in 1935-1939 the average annual export amounted to 650,000 tons) into an importer on a rather large sclae. In some years the purchase of wheat on foreign markets exceeded one million tons (in 1956 it was 1.3 million tons), and this had a bad affect on the balance of payments of Yugoslavia. During the low-harvest years a considerable part of the capacity of the light and food industries remained idle because of the shortage of raw materials. All this caused a constant increase of prices of consumers' goods and reflected negatively on the real incomes of the population.

For a number of years now the problems of agricultural production have been the center of attention of the Yugoslav public because, as was pointed out in the Yugoslav press, agricultural production "is out of step with other branches of the economy, and its lag can become a serious obstacle to our further economic development and to economic progress in general."(7)

The problem of the condition of agriculture and the prospects for its development was discussed exhaustively at the session of the Skupstina (Yugoslav parliament) in April 1957, and the causes of the lag of agriculture were revealed and the measures directed toward raising this branch in the near future were outlined. In a special resolution "On the perspective development of agriculture and its cooperation"(8) the Skupstina noted that the main cause of inadequate development of productive forces in agriculture, which suffered a great deal during the war, is the fact that the basic mass of funds was directed during the post-war years toward industrialization of the country. This has limited the possibilities of the technical re-equipment of agriculture, in the development of which, as was noted in the resolution of the Skupstina, one cannot "orient oneself to small-scale peasant enterprises as to large-scale agricultural reproduction."

Yugoslav statistics show that the process of parcelling peasant holdings, which went on intensively during the period of capitalist development of the country between the two world wars, did not stop in the post-war years either. The creation in 1947-1952 of collective peasant enterprises (on 1933 these were almost 17% of all peasant enterprises and encompassed almost one-fourth of all the arable land) slowed the further parcelling of the holdings quite considerably. But the liquidation and reorganization of the peasants' labor cooperatives (which was carried out in 1952-54) and permission to sell and buy land freely according to an established maximum (ten to 15 hectares per enterprise) could not but serve to accelerate this process. Comparison of pre-war (1931) and post-war (1956) data(9) shows that the number of independent peasant holdings increased by almost 380,000, i.e. parcelling of the agricultural area into dwarf lots continued. In 1956 the number of peasant holdings of less than two hectares was 694,000, compared with 611,000 in 1953, and the proportion of this category of enterprises in the total number of peasant enterprises rose from 25.9% to 29.5%. Even more significant was the increase in the number of peasant holdings of two to five hectares — from 796,000 in 1953 to 927,000 in 1956. This increase occurred mainly as the result of the decrease in number of peasant holdings which were united in the peasants' labor cooperatives (from 332,000 in 1953 to 48,000 in 1956) and only partly because of the absolute increase in the number of peasant holdings (from 2,360,000 in 1953 to 2,367,000 in 1956). In connection with the liquidation and reorganization of the peasants' labor cooperagives the share of the cooperative sector in the total agricultural area decreased in 1956 to approximately 4.4%, and the proportion of the socialist sector (considering all state enterprises) in 1956 was about 10%, while 90% belonged to the individual farmers.

The individual peasant holdings have not enough of even the elementary means of agricultural production. Only some 57% of them have more or less sufficient draught power.(10) Among the peasants who possess draught power there exist certain discrepancies: for instance, in Serbia the individual farmers with holdings of over eight hectares have sufficient draught animals, while those whose holdings are up to two hectares have only one-fourth the draught animals they need.(11) An investigation carried out in 1956 in several regions of Yugoslavia(12) showed that more than 50% of the peasant enterprises have no plows belonging to them, 88% have no seeding machines, 98% no harvesters. Data from the same investigation testified that about one-half of the enterprises do not till their land with their own machinery and other means of production; 53.5% use draught animals borrowed from others; 46.5% lease their land. The statistical data show that those who rent land and loan the draught animals and implements are individual farmers in nine cases out of every ten.

Yugoslav reality itself refutes the idea that one can achieve a prolonged rise of agricultural production relying on small-scale commodity production of separate peasant enterprises, and puts in first place the problem of gradual cooperatization of peasant holdings. In the Skupstina resolution quoted above, it was emphasized that: "Our road of agricultural development starts from the belief that the increase of agricultural production and the socialist reorganization of the village is one and the same inseparable process."(13) This thesis, stated in the resolution of the highest legislative organ of Yugoslavia and further elaborated in a number of decisions taken by the Party and the highest organs of the Government, was a blow at those anti-Marxist opinions which are comparatively popular among some Yugoslav economists who assert that in the development of agriculture one should rely not on large-scale socialist agricultural enterprises but on the small-size individual peasant holdings.

At present cooperatives of the supply-selling type dominate in the cooperative sector of agriculture in Yugoslavia — the so-called "general-type zadrugi." These cooperatives possess limited productive power for processing agricultural raw materials, but up to recent times their activity was mainly in realization of commodity circulation between town and village. Though the number of "general-type zadrugi" declined between 1953 and 1956 (from 7,114 to 5,576) their activity intensified and they became stronger in the organizational sense. While in 1953 the purveying-selling cooperatives bought agricultural goods worth 24.4 billion dinars only, in 1956 they bought 85.7 billion dinars' worth. For the same period of time their sales to the rural population

(7) "Nedelne informativne novine," March 10, 1957.
(8) "Borba," April 28, 1957.
(9) "Yugoslav statistichki bilten," No. 11, 1952; "Statistichki godishniak," 1955 and 1957.
(10) "Informativne bilten," April 25, 1957.
(11) "Economska politica," May 5, 1956.
(12) "Politika," Jan. 14, 1957.
(13) "Borba," April 28, 1957.

increased from 67.2 billion to 87 billion dinars.

At the same time the productive aspect of the activity of the "general-type zadrugi" extended, in particular, in the field of rendering services to the individual enterprises: leasing them implements, rendering of qualified agrotechnical assistance, etc.

Thus, the general-type cooperatives appear, on the one hand, in the role of organizers of commodity circulation between town and village, supplanting in this sphere the speculator-petty tradesman, and on the other hand they promote the growth of agricultural production. The technical equipment of the "general-type zadrugi" increased: the number of tractors increased from 2,024 in 1953 to 4,139 in 1956; the number of trucks from 665 to 863, etc.(14) But one has to note that the creation of general-type cooperatives is only the first step on the road of socialist reorganization of agriculture.

The successes of the Yugoslav people in the last years permitted an increase in appropriations for the development of agriculture. While in 1947-1955 capital investments in agriculture amounted on the average to about 18 billion dinars a year, in 1956 and 1957 they increased to 30.5 and 39.5 billion, respectively. The share of capital investments in agriculture in the total volume of state capital investments increased from 3-4% in 1947-1955 to 9.1% in 1957.

Thanks to the increase of capital investments the technical equipment of agriculture in Yugoslavia improved to a certain extent. According to preliminary data in 1957 20,300 tractors were working on the fields of the country, compared with 6,300 in 1951, and the number of other agricultural machines also increased. In 1957 almost 960,000 tons of artificial fertilizers were used in agriculture, against 467,000 in 1955.

Great tasks are posed for agriculture by the five-year plan for the development of the national economy of Yugoslavia. The average annual growth of agricultural production for the years 1957-1961 is planned at 7.4%. This is to increase the gross production of agriculture by 41.2% in comparison with the average index of 1951-1955.

The production of principal agricultural crops is planned to increase in the following amounts:

	average for 1951-1955	1961 (plan)	1961 in % of average of 1951-1955
	(in thousand tons)		
Wheat and rye	2,311	3,500	151
Corn	3,251	5,500	169
Sugar beets	1,318	2,650	201
Tobacco	28.6	59	206
Hemp	232	380	164

The plan provides for a sharp intensification of agricultural production. For instance, it is planned to raise the average crop capacity of wheat and rye from 10.8 centners per hectare on the average for 1951-1955 to 16.9 centners in 1961, or by 56%; of corn from 13.5 to 22 centners per hectare; of tobacco from 7.7 to 10 centners per hectare, etc. On the basis of the planned increase in livestock and rise of its productivity it is expected to increase meat production from 386,000 tons in 1951-1955 to 589,000 tons in 1961, or by 53%; production of milk from 1,669,000 tons to 2,450,000 tons, or by 47%.

(14) "Statistichki godishniak," 1957.

During 1957-1961 an average of 68.6 billion dinars will be appropriated yearly for agriculture, i.e. 17.3% of the total capital investments in the national economy.

The fulfillment of the five-year plan for agriculture will permit a considerable improvement in the supply of foodstuffs to the population and of raw materials to industry; it will permit extending exports and decreasing the imports of agricultural goods, and thereby improve the balance of payments of the country.

***

A weak point in the national economy of Yugoslavia is transport, especially railroads, which account for almost 80% of the entire volume of freight and passenger traffic of the country. The basic indices on railroad transport are given in the table on the following page.(15)

During the post-war years in Yugoslavia about 1,100 kilometers of new railroad lines were built. But insufficient rolling stock was added. The number of locomotives in 1956 was the same as in 1939. The number of passenger and freight cars increased only slightly, while passenger and freight traffic increased by approximately 2.5 times.

The insufficient increase in rolling stock, compared with the pre-war period, and the excessive use of the remaining cars and locomotives resulted mainly from the enormous damage which the transport of Yugoslavia suffered during the occupation and military actions. The Yugoslav press has noted also that the repair of railroad transport is not properly organized.

In the five-year plan serious attention is paid to the development of transport. Production of railroad rolling stock must reach 46,900 tons by 1961, i.e. be 3.7 times larger than it was in 1956. Along with an increase of capital investments in industry by 12%, during the five-year plan and in the national economy as a whole by 45.8%, capital investments in transport will increase by 53.2%. All this will promote modernization and raising the technical equipment of transport and liquidating its lag behind the development of the rest of the national economy.

***

One of the acute problems of the national economy of Yugoslavia is the deficit of its balance of payments, resulting from the passive balance of trade. The solution of complex tasks of industrialization of the country, overcoming of the backwardness of its economics and the consequences of war-time destruction, as well as the liquidation of the lag in the development of agriculture, predetermined the high level of import of many goods. The volume of export is increasing yearly but it is not sufficient to cover the expenses on import.

Turnover of Foreign Trade of Yugoslavia
(in billions of dinars at current prices) (16)

	1952	1953	1954	1955	1956	1957
Export	74.0	55.8	72.1	77.0	97.0	118.
Import(17)	111.9	118.6	101.8	132.0	142.2	198.
Total trade	185.9	174.4	173.9	209.3	239.2	316.
Deficit of the trade balance	37.9	62.8	29.7	55.3	45.2	80.

(15) "Statistichki godishniak," 1957.

(16) "Statistichki godishniak," 1957; "Sloujebni list," No. 5 1957.

(17) Including economic assistance from the U.S., England and France which amounted in 1951-1956 to 172 billion dinars.

	unit of measurement	1939	1953	1954	1955	1956
length of railroads	thousand kilometers	9.6	11.6	11.6	11.7	11.7
of these, normal track	" "	7.4	8.7	8.7	8.8	8.8
locomotives	in thousands	2.3	2.4	2.3	2.3	2.3
passenger cars(18)	" "	3.7	3.7	3.9	4.0	4.0
freight haulage	million tons	21.1	39.3	43.7	50.2	52.1
passengers carried	millions	58.0	131.0	147.0	164.0	159.0

While working out plans for the development of the national economy of the country, great attention is paid to the problem of the deficit of the balance of payments. The five-year plan provides for a faster rate of increasing exports than of imports. While for 1957-1961 it is planned to increase imports by a yearly average of 8%, the average rate of increase of exports is expected to be 11.9% per year. The economic assistance of foreign countries must play a smaller role in payment for the deficit of the balance of payments than in the past. Besides the extension of exports it is planned to increase the accumulation of foreign currency from tourists, services and other non-commercial operations.

A characteristic change in the structure of Yugoslav exports is the sharp decrease of the proportion of foodstuffs -- from 43.4% in 1939 to 25.7% in 1956. This happened mainly because of the discontinuation of grain exports necessitated by the rather low level of its production in the country and the increased requirements of the population. The decrease of the share of foodstuffs in total exports is explained also by the increase in export of other commodities, mainly manufactured goods. The share of manufactured goods in Yugoslav exports increased from 15.7% in 1939 to 24.3% in 1957. At the same time the share of raw materials decreased from 34.5% to 20.8%. This change of the structure of Yugoslav exports reflected the creation in the post-war years of a domestic manufacturing industry.

The increase of exports of equipment is an index of success of machine-building in Yugoslavia. In 1957 the share of equipment and means of transportation was about 7% of total exports, while before the war these commodities actually were not exported at all.

In Yugoslav imports during the post-war years the share of foodstuffs increased sharply compared with the pre-war period (from 5.2% in 1939 to 22.2% in 1957), which was connected, as stated above, with the lag in agriculture. In connection with the policy of industrialization of the country imports of machines and equipment increased considerably; their share in some periods was up to one-third of all purchases by Yugoslavia on the foreign markets. In the few last years the proportion of machines and equipment declined somewhat, which is explained partly by the mastering of production of many types of equipment at domestic enterprises and partly by a slowdown of capital construction in industry in the past years.

Yugoslavia's trade with the socialist countries is increasing, especially since the normalization of inter-state relations of Yugoslavia with the Soviet Union and the people's democracies. The share of the socialist countries in Yugoslav exports in 1957 was about 28% compared with 2.5% in 1954, and in import 23% compared with 1.2%.

The development of trade relations with the Soviet Union and the people's democracies promoted an improvement of Yugoslavia's economic position. In 1955 the vice-chairman of the Assembly of Yugoslavia, S. Vukmanovich, said: "In the next years we expect a certain improvement in our position. You know that in past years we had constant deficits in trade and the balance of payments. These deficits were the result of a general excess of imports over exports in our trade with the dollar zone. In America we had to buy wheat, coking coal and some oil. To a certain extent we imported these goods from the sterling zone. The trade agreement with the Soviet Union helps us to improve our balance of payments. Now we will be able to purchase part of the raw materials we need in the USSR. There are possibilities for further increasing commodity circulation with the Soviet Union. We will export to the USSR bauxites, cement, meat, etc., and import wheat, coking coal, rolled metals, etc., i.e. those goods which we used to buy for dollars."(19)

The development of trade relations with the people's democracies, especially with the USSR, allowed Yugoslavia to considerably decrease imports of a number of commodities from the capitalist countries, in particular from those with which it had a passive balance. Settling the accounts with the socialist countries for most of the goods imported on the basis of clearing, Yugoslavia was able to increase the export of tobacco, hemp, zinc concentrates, pyrite concentrates, caustic soda, calcinated soda, cement, electrotechnical articles, a number of consumers' goods, meat, etc.

Yugoslavia is importing some of the goods from the socialist countries by means of the long-term credits received in some of these countries. The terms of these credits, as was noted repeatedly in the Yugoslav press, are much more favorable than the credits it received in the capitalist countries. For instance, in February, 1956 Yugoslavia received in the USSR a trade credit of 54 million dollars and a loan in gold or foreign currency of 30 million dollars at 2% per annum to be paid off in ten years. Let us remember that credits received by Yugoslavia from the capitalist countries, for a rather short time, as a rule were granted at 3.5-8.5% per annum.

In 1958 implementation of the three-year (1958-1960) trade agreement between the USSR and Yugoslvia, which was signed in April 1957, began. On the basis of this agreement trade relations between the two fraternal socialist countries are expanding and strengthening.

Trade is not the only form of economic relations established and expanding between the USSR and Yugoslavia. Along with the trade agreements between two friendly states other economic agreements were concluded. In January, 1956 an agreement between them was signed providing for construction by Yugoslavia, with the assistance of the USSR, of a nitric fertilizers plant with a capacity of 100,000 tons of ammonia per year, a superphosphates factory with a capacity of 250,000 tons of superphosphates and 120 tons of sulphuric acid per year, and an electric power station with a capacity of 100,000 kilowatts, and also for the assistance of the USSR in reconstructing three mines. The Soviet side agreed to work out the project and supply the needed equipment and a part of materials, to send its specialists for consultation and guidance in assembling and installation, adjustment of the equipment and setting these enterprises in operation. Yugoslavia will receive free of charge from the

(18) Including automotive.

(19) "Borba," Oct. 18, 1955.

Soviet Union the necessary licenses and technical documentation. The Soviet Union also expressed willingness to accept Yugoslav engineers and workers in order to train them for work in the enterprises enumerated above. The USSR Government allocated to Yugoslavia credit for a corresponding sum, for ten years at 2% per annum, to pay for the work on planning, for the equipment, etc. In accordance with the agreement reached during the summer of 1956 in Moscow, Soviet organizations will deliver to Yugoslavia the equipment and materials for the nitric fertilizers plant in 1958-1960, and for the superphosphates factory in 1961-1963.

Yugoslavia has favorable conditions for the development of the aluminum industry. In August 1956 the Soviet Union and the German Democratic Republic signed with the Federal People's Republic of Yugoslavia a three-sided agreement on rendering assistance to Yugoslavia for development of the aluminum industry.

In December 1955 an agreement on scientific and technical cooperation was signed in Belgrade by the Soviet Union and Yugoslavia by which the mutual exchange of experience and technical achievements in industry, mining, construction, transport, agriculture and other branches of economic activity is regulated.

***

It is known that during a number of years in connection with economic difficulties Yugoslavia did not possess sufficient possibilities for a considerable improvement of the material welfare of the people. The cost of living was mounting, especially in the years of poor harvests of crops, retail prices were increasing faster than the income of the population, and as a result of this there was some lowering of the real wages of the workers and state employees. In 1957 certain stabilization of the domestic market occurred. The personal consumption per capita (after some decline in 1956) increased in 1957 by 11.5% and real wages increased by almost 14%.

One of the main tasks of the five-year plan for development of the national economy of Yugoslavia is the increase of personal consumption and improvement of the material welfare of the population. It is planned to secure this by a constant growth of production and national income, which in 1961 is to be 54.4% higher than that of 1956. It is planned to sharply increase production of consumers' goods, to extend the retail trade network and to increase the circulation of commodities. It is expected that the planned rate of growth of employment will assure liquidation of unemployment in the country.

The fulfillment of the five-year plan must result in the increase of social production and in strengthening socialist production relations in the entire national economy. The share of the socialist sector in the aggregate social product in 1961 will be 85%, compared with the 56% in 1956. The toiling masses of the Soviet Union and other socialist countries wish the fraternal Yugoslav people successes in the construction of a socialist society and in the solution of the tasks set in the five-year plan.

A. Rubinshtein:

Once More on the New Draft Program of the Austrian Socialist Party

The project of a new program was presented at the Convention of the Austrian Socialist Party held at Salzburg in November, 1957. It was prepared by a commission composed of Dr. Bruno Kreisky, Fritz Klenner, Alois Piperger (one of the secretaries of the Party) and Benedict Kautsky (the son of Karl Kautsky), assistant professor at Vienna University and member of the editorial board of the theoretical organ of the Party, "Die Zukunft." According to the resolution of the Convention, this project of the program has to be discussed at the local organizations of the Party; then it will be presented for approval at the extraordinary convention of the Austrian Socialist Party planned for the Spring of 1958.

Aside from the additional resolutions on the program and various "programs for action" which were passed at different times, this is the third program of the Austrian Social-Democrats.

The first program was passed at the Heinsfeld Convention in 1889 and then supplemented at the conventions at Vienna, Brun, etc. In its content it was close to the Erfurt program of the German Social-Democracy. True, even in this program the conclusions drawn by Marx from the Paris Commune were not taken into consideration. But still for its time it was a progressive socialist document. In 1899 V. I. Lenin wrote about the Erfurt program as follows: "Precisely now when one hears so often opportunistic and indefinite criticism of this program, we consider it our duty to express ourselves openly for it."(1)

For the first 15 years of the 20th century revisionism succeeded in completely conquering Austrian Social-Democracy. This was made possible to a great extent by its leaders and theoreticians, Victor and Frederick Adler, Otto Bauer, Karl Renner and others, who covered their policy of supporting reformism with "left-phrases." In the circles of the Second International they were known as masters of the notorious "Austrian Marxist dialectics," which justified every retreat and capitulation before the bourgeoisie. In the new program approved at the Linz convention in 1926, attempts were made to combine what cannot be combined, i.e., somehow to join Marxism with revisionism. In this program the "reasonable" policy of the Austrian Marxists during the years of war and revolution was justified. There was no analysis of contemporary imperialism, but a "democratic" and reformist road to power and socialism was outlined for Austria. And still this program did not openly break with Marxism.

After the rout of German fascism, Austrian Marxism, which temporarily disappeared from the historical scene, began to show signs of life and succeeded, with the help of its Western allies, in gaining a certain influence among the masses. During the post-war years Austrian Marxism, like other varieties of Social Democracy, evolved rapidly. This is shown by the projection of a new program, which does not hide the fact that it now involves an open rejection of Marxism.

F. Klenner, on the pages of "Arbeiter Zeitung" (12/8/57), compares Marxism with an archaic kerosene lamp which was long ago replaced by the contemporary electric lamp. The old Austrian Marxist Oscar Pollak attempts to persuade his readers that there now remains only a method to be learned from Marxism. Very typical is the article published in the magazine "Die Zukunft" by Butshek, "The Future of Socialism." The leading role in Western socialism, asserts this article, now belongs to the British Labor Party as the most powerful in all respects. The Laborites have the right to leadership not only in politics, but also in the field of theory. In the frame of British socialism different socialist theories peacefully coexist. One of those theories was Marxism. As for the parties of Central Europe, their "store of knowledge was much less rich and was limited to Marxism alone... During the periods of great economic and social upheavals the leadership must belong to the party which possesses the store of knowledge having an all-embracing character."(2)

Having rejected Marxism, i.e., scientific socialism, the Austrian-Marxists thus capitulate before the petty-bourgeois "ethical" socialism of the British Fabian and Guild socialists. It went so far that one of the leaders of the party suggested at a closed meeting at Vienna "to clear the table radically" and to give up the delapidated concept of "socialism." Benedict Kautsky, one of the authors of the projected new program, replied that he is in agreement with such a point of view, but does not find as yet any other more suitable concept.

The publication of the project was preceded in Austria and West Germany by a lengthy discussion of the theory of socialism, the attitude toward communism, the technical revolution, and the economic role of the contemporary capitalist state, etc. In the process of this discussion two points of view were outlined. The left-wing socialists and publicists (mainly people more closely connected with mass-labor and trade-union organizations and, in particular, with youth) insisted on the necessity of preserving the "stock of socialist traditions" accumulated during several decades. They suggested caution, not to be in a hurry to reject the phraseology familiar to the masses. The right-wingers recommended throwing overboard, as quickly as possible, the remnants of Marxism in order to facilitate ideological maneuvers under new conditions.

Benedict Kautsky and his co-authors have tried to use the Austro-Marxist regular method of "coordinating" and "conciliating" both points of view. This was reflected in the project of the new program of the Austrian Socialist Party.

To begin with, the basic theses of scientific socialism, which from the time of the "Manifesto of the Communist Party" were put in first place in the old Social-Democratic programs, are absent from this document.

The project of the program starts by a definition of socialism: "Socialism is a social order...the aim of which is the free development of human personality. Its premises are economic independence, social equality and material security. Socialism is the transition of democracy from the

(1) V. I. Lenin, Vol. 4, p. 125.

(2) "Die Zukunft," No. 11, 1957, p. 292.

field of politics and law to the field of economics and into social life."(3)

It is not difficult to see that the socialism of today, as the author calls it, does not mean at all "the generalization of the experience of the last decades." On the contrary, this is the return to the socialism of the day before yesterday, to the pre-Marxist, dogmatic, normative, juridical socialism. Marx and Engels subjected this petty-bourgeois socialism to a devastating criticism in their early works and in the "Manifesto of the Communist Party." In the 1870's Marxism already gained a victory over this "socialism of equality and freedom" and abolished it from the programs of practically all the Social-Democratic parties of the European continent. The "left-overs" of petty-bourgeois socialism in the Gotha program were criticized by Marx in the early 1880's. F. Engels in the well known article "Juridical Socialism," and also in the recently-published letters to Paul and Louis Lafargue, warned the German and the French parties against the very harmful relapses of this "normative socialism."

The question of the definition of socialism in the program of the Austrian socialists has its history. The present editor of the "Arbeiter Zeitung," O. Pollak, when the Linz program was discussed, asserted that it was impossible to compress the essence of a new social formation in one formula. The completness of such a formula would make difficult its expression in words; and a short statement would leave unclarified "voids," etc.(4) But behind this flowerly argumentation it is easy to see that O. Pollak and other Austro-Marxists could not stand the inclusion of Marxist teachings about socialism, and the dictatorship of proletariat in the program of the Party. On the other hand, they did not dare then to reject Marxism completely and therefore they preferred to refrain from a general characterization of socialism.

Benedict Kautsky and his co-authors proved to be more "daring." They completely and openly rejected scientific socialism, returned to the formula of the archaic "normative socialism" and presented it as a final achievement of scientific socialist thought.

Similar "daring" was shown by the authors of the project in their evaluation of contemporary capitalism. It is known that the author of the Linz program, Otto Bauer, prudently avoided following the advice of the right-wing reformists and did not include in the program the theories of ultra-imperialism and organized capitalism, fashionable at that time but bankrupt soon afterwards. But Benedict Kautsky inscribed in the project of the new program the theory of "new capitalism," which is popular now among the reformists, a theory which is hardly different from the old theory of "organized capitalism."

To characterize contemporary society the authors of the projected new program start from the existing division of the world in two opposite world systems, capitalist and socialist. They also take into consideration such an indisputable fact as the collapse of the world colonial system. But all this is presented in a distorting mirror of reformist opinions.

The authors of the project assert that capitalism has been "radically changed" since the time of Marx. To prove this they adduce a number of facts testifying to the development of the social character of production. But without any reason they draw from this the conclusion that the private character of appropriation also has changed and become limited. The role of monopolies in contemporary capitalist economy is mentioned a number of times, but the problems of the domination of monopolies and the financial oligarchy and their omnipotence, etc., are studiously passed by. The authors discuss the relative "stability" of contemporary capitalism, which became "New Capitalism" in their eyes, and talk about the advent after the Second World War of the notorious "state of universal prosperity."

Noting the gains of the proletariat in some Western countries in recent years in the field of democratic rights and social legislation(5), the right-wing socialists declare that after the Second World War the capitalist countries ceased to be the tool of the class domination of the bourgeoisie and as a result of the influence of the proletariat, they express the "general will of the people."

The new "welfare state," assert the authors of the project, has already succeeded in establishing "justice" to a certain extent in the distribution of the social product, liquidating poverty and misery, and limiting the arbitrary rule of the capitalists, thanks to the "participation" of the workers in the management of production, etc. The social ascent of the proletariat supposedly alleviated all class contradictions and smoothed them out in the frame of the new "democratic state." The role of organizer and stabilizer of the capitalist economy in the interests of the "whole" is ascribed to the "welfare state." In the project of the new program it is asserted that workers achieved complete political equality, "penetrated" the bourgeois state, and forced it to serve the interests of the toiling masses and secure full employment.

The theory of "the state of universal prosperity" certainly has as its aim holding back the proletariat from revolutionary struggle for socialism. That leaves no room for doubt. But here is the question: Did the changes about which the authors of this theory write really occur?

During recent years the volume of industrial production in Austria increased considerably and by the end of 1957 reached 264% of the pre-war level, while labor productivity increased by 42%. After some difficulty at the end of 1956, the growth of production and the rise of labor productivity continued into 1957. The total productive value of all branches of the national economy increased by 10% in 1957.(6)

In 1956 labor productivity in industry increased by 21% compared with 1953. But real wages, according to the calculations of the Austrian Institute of Economic Research (based, in the opinion of many Austrian economists, on underestimated data of the rise of the cost of living) increased in 1956 by only 9% as compared with 1953.

Thus, judging even by these inaccurate data, the Austrian workers could not themselves benefit by the increased labor productivity during the years of high indices, and their share in the national income of the country did not increase, but even decreased.

In November, 1957 the Austrian Institute of Economic Research published a work, "The Rate and Structure of Wages in Austria." In spite of discrepancies in this research and its clear tendency to overestimate the income of working people (and this is confirmed by an analysis of these data in the magazine "Die Zukunft," No. 12, 1957), it is admitted that real wages during the period of 1954-1955 did not correspond to the growth of labor productivity and decreased per unit of production by 10% compared with 1952.

(3) Here and afterwards the project of the program published in the "Arbeiter Zeitung" 11/23/57 is cited.

(4) "Der Kampf," Yargang XIX, Sept. 10, 1926, p. 443.

(5) In the project of the new program, naturally, the fact that these gains were made possible by the existence of the USSR and the mighty camp of socialist countries is passed over in silence.

(6) "Volksstimme," 12/28/57.

The growth of labor productivity in Austrian industry was accompanied by a rapid growth of labor intensity. The statistics of accidents in industry show that they are increasing as the result of the growth of labor intensity. The number of accidents, recorded officially, was 113,000 for Austria as a whole in 1948, 219,000 in 1955 and 230,000 in 1956.(7) According to the reports of the Kranken Kasse of Lower Austria of 1956, the number of accidents in the pre-war years was one per 8.7 of the workers covered by insurance, one per 7.04 in 1949 and one per 5.27 in 1956.(8)

In 1956, out of 100 pensioners, 40 received pensions for disability, and two-thirds of them were under 60 years of age. The reports show that early disablement is the result of the increased intensity of labor.(9)

The continuous growth of prices, with the growth of wages lagging behind, results in the situation where the real wages of the Austrian workers even now have not reached the level of 1937. Consequently, there cannot be any talk of a "more justified" distribution of income between the classes in the Austrian "state of universal prosperity" after the Second World War.

According to the index of prices for goods established by the Austrian Institute of Economic Research, which includes those consumed by workers, these prices were higher in July, 1957 than in March, 1938 by 730.5 points. Let us take this calculation as a basis, though many investigators assert quite correctly that the prices actually went up 900 points. The wages of the basic categories of Austrian workers according to collective agreements stood at 583.9 in July, 1957 for construction workers, compared with December, 1937 (when prices were even lower than in March, 1938); 635.9 for builder-helpers; for metal workers — 672.3 and 600; 547.2 and 550.9 for leather dressers and tanners; 669.7 and 623.7 for those working in the chemical industry; and 642.3 and 608.7 in the oil industry, etc.(10)

True, in some enterprises workers succeeded in achieving an increase in wages above the rates provided by the collective agreement, but the employers are decidedly against a change in the agreement, considering the very real perspective of a decline in business in the near future. The reduction of the level of real wages, in comparison with 1937, is clearly characterized by the following table:(11)

	Prices in 1937	Prices in February 1957	Number of kilograms or other units in weekly wages		How much less in 1957 than in 1936 in %
	in shillings		1936	1957	
Rice	0.60	7.50	86.67	50.66	41
Potatoes	0.12	1.20	433.33	316.67	27
Butter	4.60	34.20	11.30	11.11	1.5
Margarine	1.24	13.60	41.94	27.94	33
Vegetable oils	1.90	15.80	27.37	24.05	12
Beef	2.80	28.00	18.57	13.57	28
Pork	3.40	31.00	15.29	12.26	20
Men's suits	75.00	1,200.00	0.69	0.31	55
Shoes	14.90	240.00	3.5	1.6	54
Men's shirts	9.00	100.00	5.8	3.8	35

Thus, in the "state of universal prosperity" wages went down. To evaluate properly the data of this table, one has to keep in mind that in 1936 and at present as well, Austria occupied one of the last places among the capitalist states of Western Europe in respect to real wages. In 1956 one working hour cost the employer in Italy 46 cents, in Western Germany 51 cents, in France and England 70 cents, in Sweden 80 cents, and in Austria only 40 cents.(12)

Some increase in the income of the working population and in consumption during 1953-1956 occurred, but not as a result of the increase in real wages. The high indices and relatively full employment resulted in an enormous growth of overtime work. The trade-union press points out that there are many cases where two jobs are held which occupy 96 hours a week. Exactly on account of these sources the monetary income of workers' families was increased.(13) Similar phenomena were always observed during periods of relatively high business activity.

The assertion that the "state of universal prosperity" secured full employment can be attributed to the field of fantasy. Even now, during a period of relatively high business activity in a number of regions of Austria, 10-15% of the workers have no permanent work, and 4 to 5% unemployed is considered as something that "goes without saying." Equally wrong is the assertion that "poverty is overcome." The newspaper of the Austrian Government People's Party ("Das Kleine Volksblatt"), which is not interested at all in revealing the real situation, is forced to admit that, out of more than two million persons occupied in industry, not less than 1.75 million have to be satisfied with an income which is below the established pauper's living wage.

The authors of the projected new program also assert that in the "welfare state" the rights of workers are enlarged and one cannot speak any more of the "autocracy" of capitalists, etc. It is true that during the years of danger for the bourgeoisie — 1919 and 1947 — there was talk about "democratization" of industry. But the organizations representing the workers — factory councils — did not at all get such rights as would justify talking about "participation" of workers in the management of production. In 1945-1946 workers of some enterprises secured, by way of an accomplished fact, participation in the management of production, in hiring and firing of the workers and employees, but the law "On the factory councils," passed in 1947 and still operating now, did not recognize these rights of the workers. Characterizing this law, the president of the Union of Industrialists, Raab (now the Chancellor of Austria), wrote in 1947 that "the employer

(7) "Volksstimme," 12/10, 1957.
(8) "Volksstimme," 11/19, 1957.
(9) "Die Arbeit," No. 10, 1957.
(10) "Die Arbeit," No. 10, 1957.
(11) "Die Arbeit," No. 3, 1957.
(12) "Die Arbeit," No. 3, 1957.
(13) "Volksstimme," 12/4, 1957.

remains, as before, the boss at his factory."(14) More than that, the trade unions in Austria do not have rights which were gained in a number of other capitalist countries. Thus, for instance, in Austria the fascist law of 1936 "against terror at the enterprises" still is operative, which deprives the workers of the possibility of preventing the agents of the employers from entering the factory; it makes it difficult to defend the principle of the "closed shop" (i.e. hiring only members of trade-unions).

Opposing any expansion of the rights of workers and workers' control over production, the Austrian "welfare state," just as every other bourgeois state, transmutes so-called state control over the monopolies into a fiction, and turns it into monopoly control by the state.

In 1951 in Austria the law on control of trusts was issued. When this law was discussed in the Parliament and later in the press, representatives of both ruling parties (People's and Socialist) promised to make this law "an active instrument" of control over monopolies and thereby to stop the steady rise of prices provoking the indignation of the broad masses. And what happened in reality? First of all, the majority of the monopolies did not even need to register according to the new law, for only groups of capitalists with formal agreements were obligated to register. Yet one-third of all goods produced by capitalist industry in Austria is produced by only one firm, which is completely monpolistic and does not need any agreements for capturing the market. Another third of the goods is produced by two to six monopolies. Such a limited number of capitalists can easily conclude an oral, so-called "gentlemen's agreement" avoiding a formal contract. As a result, up to August, 1956 only 103 out of the existing 500 monopolies of Austria were taken into consideration.(15)

During the time of existence of this law there were no attempts to restrain monopolists from raising prices. And the law actually did not provide for such exigencies.

Benedict Kautsky, in spite of his zeal for embellishing contemporary capitalism, must take into consideration the fact that the most active members of the Socialist Party consist of more than the young careerists-intellectuals who entered the Party after the Second World War and already succeeded in getting lucrative posts (precisely these persons, having achieved their own well-being, are ready to declare contemporary capitalism as "socialism" and Marxism as "antiquated"). The rank-and-file socialists from working circles feel the burden of capitalist exploitation and therefore are not inclined to admit that the "welfare state" is "almost socialist." In the project of the program no small place is given to the further movement of the "welfare state" toward socialism.

In the project the possibility is even indicated of a "revolutionary" character of this movement in case the bourgeoisie should perpetrate forcible upheaval and liquidate democracy. But such a "threat" is no more than a familiar Austro-Marxist "left" phrase. The authors of the project of the program assert that the monopolistic bourgeoisie of the Western countries supposedly changed after the Second World War and became convinced of the inevitability of socialism, of the beneficial role of the welfare state," of the fact that the liberal and even the conservative ideologists of the bourgeoisie started to speak in a new "socialist" language and that fascism and all the other forms of forced domination of the bourgeoisie contradict the very essence of contemporary capitalism. Here they detect the possibility of a general transition of the "welfare state" into socialism.

(14) "Die Arbeit," No. 3, 1957.
(15) "Die Arbeit," No. 3, 1957.

All the old programs of the Social-Democrats (including that of Linz), whatever their reformist description of the road toward socialism, admitted the necessity of socialization of the means of production as a condition for the transition to socialism. Since 1918 the theory of "socialization," i.e., of gradual transfer of the means of production into the hands of bourgeois states became quite popular among the Social-Democratic parties.

Now the right-wing socialists openly reject completely or partially the socialization of the means of production, even the reformist interpretation of it. The expropriation must be limited to the "minimum," compatible with the purpose pursued. It is said in the project of the program that "the question of whether entire branches of industry or only separate enterprises should be included in the socialized economy will be decided by consideration of the interests of the economy as a whole...Most likely broad spheres, first of all enterprises with rapidly changing production programs or sectors with a prevalence of small business, will always remain reserved for private enterprise."

Thus, under Austrian "socialism" along with the enterprises belonging to the state, there will remain forever broad spheres reserved for private business. Consequently there will remain those "groups" and classes from which B. Kautsky promises to liberate society when speaking about the transition from "the welfare state" to socialism.

In their rejection even of bourgeois nationalization the authors of the program cover up with syndicalist reasoning now fashionable among the reformists and revisionists, conceiving the transition from the state to some "higher" social ownership. But it is clear that the transition from state ownership, which is supposedly already out of date, to a "higher social form" in the frame of bourgeois society, is a purely reformist fiction.

The Austrian proletariat is faced with an entirely different problem. It is forced to resist the attack of the reactionary bourgeoisie against industry which is already nationalized. The monopolists demand de-nationalization, i.e. the return of the enterprises which belong to the state to the hands of the monopolies.

A bitter struggle around this problem has already develop in Austria. The workers at the enterprises are resolutely opposing de-nationalization. The Communists and revolutionary trade-union opposition are by no means indifferent to the problem of nationalization of industry under capitalism. On the contrary, they support this nationalization as far as it is directed against monopolistic capital and can be used in the interests of the proletariat.

The authors of the project of the new program pretend to be adherents not only of preservation but even of extension of the "social" sector. But this declaration contradicts the actual situation. It is known that nationalized industry plays an important role in the economy of Austria. The enterprises which belonged to fascist military criminals and to German monopolistic capital passed to the jurisdiction of the state. By now 25% of industrial production belongs directly to the state, and considering the influence of the nationalized bank, the state now controls about one-half of the entire production of the country.

With the development and strengthening of workers' control, spontaneous activity and initiative of the masses, and the expansion of trade relations with the East, the perspectives of further growth of state industry are favorable. But the high rate of business activity and successes of Austrian state industry kindled the appetites of foreign and domestic monopolies. The organizations of manufacturers and the leaders of one of the ruling parties —the People's Party— closely connected with them started a persistent fight for the de-nationalization of state industry.

Though the management of the nationalized banks was in the hands of the agents of finance capital, the monopoly leaders preferred completely to get rid of any interference of the state in the affairs of the nationalized banks and enterprises directed by them. In 1956 the leaders of the People's Party, taking advantage of the necessity of immediately paying 430 million shillings to the employees of the state in 1957, offered to sell 40% of the shares of the two largest nationalized banks of Austria. Actually, the need for this payment was only a pretext because the necessary sums could be found in another way, for the budget of 1956 was completed with an excess revenue of two billion shillings. The newspapers of the People's Party did not hide the fact that the suggestion for selling the shares had a different reason. The newspaper of the Union of Manufacturers, "Die Industrie," wrote: "The first withdrawal of shares from the portfolio of the state should be considered as a forerunner of further withdrawals and as the first step...to the limitation of state influence on industry. This is simply a method of influencing the Socialist Party and compelling it to make up its mind to take a difficult course."(16)

As an ideological screen, the People's Party used the slogan "people's shares." The shares were issued in small denominations. It was said and written that they have been and must be only in the hands of small holders and remain in their hands so that the fate of the banks will be decided by the "little man," etc.

As for the Socialist Party, at its convention in November 1956, passionate speeches were made against the project advanced by the People's Party. Deputy Wainkert accused the People's Party of provocation. "Yes, a coalition," he said, "but not at any price. To accept this proposal would mean a sacrifice of basic principles." The Socialist Party and trade-union press protested against the "squandering of state property" and ridiculed the slogan "people's shares," etc. And then? Then negotiations on an "equal footing" began and the socialists capitulated before the demands of the People's Party. On December 18, 1956 the socialists voted in Parliament for the sale of the shares. It was stipulated that shares could not be sold abroad, but, as it is admitted by the bourgeois press, the shares actually fell into the hands of large-scale monopolies and foreign capital.

The offensive of the bourgeoisie did not limit itself to a partial de-nationalization of the banks. Next in line was industry. The de-nationalization affected, first of all, those enterprises which were transferred by the Soviet administration to the Austrian Government after the conclusion of the State Treaty. American finance capital wanted to acquire the most important among them — the oil industry. The socialists here also started by declarations "of principle," but finished by pitiful capitulation. On March 10, 1956, the "Arbeiter Zeitung" wrote: "The socialists demand that this powerful business with great future possibilities (the oil industry) remain in the hands of the people." But later on it was revealed that during the period when the State Treaty was discussed the leaders of the People's Party, together with some leaders of the Socialist Party (Sherf and Kreisky), had signed the so-called "Vienna Memorandum," i.e., the agreement with the representatives of American and British oil companies about the sale to them of the majority of enterprises of the Austrian oil-producing and oil-refining industry. The official circles of the Socialist Party asserted that this memorandum has only a preliminary character and had no force until approved by Parliament. Whereas in 1957, there began the transfer of a number of the Autrian oil-refining enterprises to foreign capital. The workers started a campaign against the de-nationalization of industry, but the Socialist Party did not support it.

Now Austrian Chancellor Raab and other outstanding members of the People's Party openly advocate the sale of shares of large-scale state enterprises. The ruling People's Party, with the connivance of the socialists, is undertaking certain important measures for disarming state industry, undermining its vitality, and compromising it in the eyes of the Austrian people. Among such measures is, first of all, the revocation of paragraph four of the law concerning nationalized industry. This paragraph authorized the state enterprises to form out of their profits a special fund for investments. Now the state enterprises must turn in all of their profits to the Ministry of Finance. It was explained that they have to look for funds on domestic and foreign markets. Thus, the possibility of infiltration of private capital into state industry is sanctioned. With the same purpose in mind sharp reductions were made in the expenses for which provisions were made in the state plan of investments for railroads and the system of communication, etc., in the budgets for 1957 and 1958. Finally, it is significant that many representatives of monopoly capital are appointed to leading positions in nationalized industry. For instance, Dr. Hans Igler was appointed to the post of chairman of the board of nationalized industry. He is connected with Chancellor Raab and represents the Shiller family — one of the richest capitalist families of Austria. The Siemens concern is headed by the capitalist Mautner-Merkgoff. All of them are known as enemies of industrial nationalization and advocates of denationalization. Quite correctly the organ of the revolutionary trade-union opposition, "Die Arbeit," writes about them as "goats in the role of gardeners."

And what about the Socialists? Well, they voted in Parliament together with the deputies of the People's Party for the revocation of paragraph four and for the reduction of investments.

In the press of the Social-Democrats and at the meetings of local organizations of the Austrian Socialist Party the project of the new program has already been discussed for four months. Under the pressure of criticism from the "left," the authors of this project are forced to deny their complete retreat from Marxism. They extol Marx as the theoretician of "early capitalism" and swear their loyalty to his method. Benedict Kautsky even declared that it is not "any concession of the essence"; the whole matter is in terminology. "The old Marxist terminology disappeared," he writes, "and its place is taken by a new terminology corresponding to the needs of our times." When working out the projected program the authors supposedly considered that the basic theses of Marxism are beyond comprehension for contemporary youth. It is characteristic that the authors of the project have to shift by every means and present their repudiation of the basis of Marxism and capitulation before bourgeois ideology as a "new method" of exposition of Marxism.

Maneuvering under the blows of criticism from the left, Kautsky was forced to assert that the "new program is consistently socialist. Any possibility of transforming the Austrian Socialist Party into a party of social reforms is denied."(17) But on the same page it is said that the Austrian Socialist Party is converted into a party of all working people, including the "independents." But it is known that bourgeois statistics consider the entire bourgeoisie (the petty-bourgeoisie, as well as the big bourgeoisie, including the magnates of finance capital) as "independent." Kautsky is using this term precisely in this sense. Thus,

(16) "Die Industrie," 12/8, 1956.

(17) "Die Neue Gesellschaft," No. 1, 1958, p. 64.

being consistently "socialist," the Austrian Socialist Party expresses the interests of the entire contemporary bourgeoisie. Commentaries are unnecessary.

Answering the criticism of the left-wingers, the authors of the project and other representatives of the right wing of the Austrian Socialist Party not only reject the only realistic road toward socialism — the road of the dictatorship of proletariat, but reject the very idea of socialization of the means of production and their passing into the hands of the state. For instance, Fr. Sheou, one of the prominent "experts on problems of economics," openly declares that "nationalization of the 'old style' is no longer popular. We feel that it did not fulfill its promises." Sheou criticizes the project of the program for its ambiguity on this question. He demands that preference be given in the future to nationalization of the "new style" proposed by the Laborites — gradual purchase by the state of the shares — and that it be so stated in the program. "It should be clear to everyone that in this question," writes he, "we moved away from the ideas which were defended by Karl Marx and the former socialists. We want to free from socialization not only the humble shoemakers with their hand tools, but also some enterprises with hundreds of workers, which will also continue their existence under socialism."(18)

Expressing the dissatisfaction of the rank-and-file socialists and old officials of the Socialist Party with the renegade character of the new projected program, the left-wing socialists criticize it, though inconsistently and contradictorily.

It is worth while to note what was said by the prominent socialist theoretician and publicist, I. Hindels, who insists on the necessity of "preserving the spiritual bridge" connecting the present with the socialist programs of the past. Referring to the traditions of the social-democratic movement and the speeches of its old leaders, Hindels criticizes the project of the new program for its retreat from Marxism. In calling this retreat "spiritual intervention of the bourgeoisie," Hindels appeals for serious consideration of the question of whether Marx was right in his anticipation of the path of development of capitalism. Relying on the newest data on the development of contemporary capitalism, he proves that the law of capitalist accumulation advanced by Marx, as well as the theory of class-struggle, retain significance for our time. Only on the problem of absolute impoverishment did Hindels give in to the pressure of reformist ideology. Denying impoverishment in its "material meaning," he substitutes the term, "spiritual impoverishment."

The statements of Hindels against the slanderous inventions of the authors of the projected new program about the USSR and the countries which were liberated from colonial dependence deserve attention. Turning to that section of the program in which the progressive character of the Great October Socialist Revolution is denied, he writes: "Let me make a personal remark. I have been specializing in the problem of the development of the Soviet economy for a number of years and have a number of articles concerning it. Looking over my files, I made an amazing discovery. There is hardly a socialist or bourgeois-liberal expert on Russia who would evaluate the development of the Soviet society since 1947 so one-sidedly and negatively as it is in the project of our new program." Then Hindels speaks of the great cultural revolution achieved in the USSR, the increase in material well-being, universal improvement of the standard of living, about which "all those who have had opportunity to visit Russia recently" speak. All this, he notes, is the result of the correct policy outlined at the 20th Congress of the CPSU. He also speaks about the enormous and multi-sided development of technology in the Soviet Union, about the extension of housing facilities, and other facts of Soviet actuality. "Let us be careful," appeals Hindels, "to avoid that anti-Communist one-sidedness which was resolutely rejected since the appearance of sputnik even by bourgeois sociologists and publicists." The authors of the program do not see the "historical impetus that the October Revolution had for the international proletariat."(19)

In the same magazine, "Die Zukunft," other left-wing socialists appeared with criticism of the project. For instance Brode considered that the program must "clearly express" the task of liquidation of classes, because the genuine socialist society is a classless society. Anders criticized the vulgar theory found in the project which declares that the cause of crises is under-consumption. He revealed the causes which have temporarily changed the course of the capitalist cycle after the Second World War and unmasked the apologetic character of the argument about full employment, behind which the armament race very often hides.

It is characteristic that the historical Austro-Marxism of Adler and Bauer remains even now the indisputable authority for the left-wing critics of the new projected program. "We did not have 'pseudo-Marxist' orthodoxy in our country," wrote Hindels, "but we had the vital school of Austro-Marxism which brought up several generations of activist workers."(20)

But the theoreticians of the left wing of the Austrian Socialist Party actually hark back to Bauer and to the Austro-Marxist orthodoxy. But "orthodox" Austro-Marxism died, and nobody can succeed in reviving it. Precisely this adherence to Austro-Marxist "orthodoxy" is responsible for the numerous contradictions and mistakes of the left-wingers. Thus, having bitterly criticized the project, Hindels finally agrees to accept it "in essence." Not daring to recede from the 1931 opinions of Otto Bauer in his evaluation of the Soviet Union, Hindels expresses hope for the gradual regeneration of the Soviet state and Soviet economics in the spirit of the "Western" principles of right-wing socialism.

Many members of the left wing are convinced even now that it is possible to combine "orthodox" Marxism with the admission of the theory of peaceful transition of capitalism into socialism.

***

If the project of the new program becomes the program of the Austrian socialists, this will further intensify the internal contradictions within the party.

Thousands and thousands of workers hate capitalism and strive towards genuine socialism. But the leadership of the Socialist Party is degenerating and deviating further and further from Marxism.

One can foresee that this contradiction will finally become stronger than the old Social-Democratic traditions. Whatever the new program, whatever the vitality of the reformist ideas among the socialist workers, nothing can overcome the objective historical necessity of a united front of all workers in their fight against capitalist enslavement, for peace, and for socialism.

(18) "Die Zukunft," No. 1, 1958, pp. 8, 11.

(19) "Die Zukunft," No. 1, 1958, p. 15.

(20) "Die Zukunft," No. 10, 1957, p. 266.

N. Ryauzov:

A New Book of Economic Statistics

T. B. Ryabushkin, "Statistical Methods of Studying the National Economy," 1957, 288 pp., State Publishing House

Soviet statistics has the richest experience in constructing a balance of the national economy and in working out a whole series of the most complex methodological problems connected with the clarification of the process of socialist reproduction on the statistical plane. However, insufficient attention is paid to the theoretical generalization of this experience. In recent years no special monographs were published devoted to the investigation of national economic connections and proportions, to methods of studying the process of socialist reproduction. A presentation of these problems may be found only in textbooks on economic statistics, and even here only in general terms.

The work under review fills this gap to a certain extent. In it a wide group of hypothetical problems of social economic statistics are touched upon. The book consists of five chapters: "A System of Indicators of the National Economy;" "A Classification of Branches of the National Economy;" "Statistical Methods of Studying Proportions and Interrelationships Between Branches of the National Economy of the USSR;" "Statistical Methods of Studying Proportions and Interrelationships Between Branches of the National Economy of Capitalist Countries;" "On the Comparability and Common Measurability of Indicators of the National Economy."

In the first chapter the author correctly indicates that under the conditions of socialism, national economic planning and a centralized system of general state statistics require the construction of a scientifically based system of mutually connected indicators. We have worked out such a system and it is applied successfully in the practical works of the organs of general state and departmental statistics. It covers all branches and subdivisions of the national economy, all of the most important economic connections in the process of reproduction. This system is also applied in the statistical and bookkeeping reporting of state and cooperative enterprises and organizations.

Because the practical work in the sphere of statistics is based on a uniform scientifically based system of indicators the data are comparable at the territorial level as well as over time. However, it must be noted that this system is not frozen — it undergoes modification, reflecting social-economic transformations and technical progress in our society. Therefore it is necessary to improve the system of indicators of the national economy.

The existing uniform system of statistical indicators of the national economy has not been thoroughly clarified in our literature. This is explained by the exceptional difficulty which confronts an attempt to express the whole variety of statistical indicators of the national economy in a more or less brief model. It is sufficient to remember that the material issued in 1932 by the USSR Central Administration of National Economic Accounting on the construction of a system of indicators for the accounting of the national economy consisted of 350 pages. The author of the work under review has constructed a model of a system of indicators for the national economy (pp. 12-13). If we compare this model with the system of basic statistical indicators presented in the textbook "Statistics,"* it may be noted that the model proposed by T. B. Ryabushkin appears to be more complete. However, it is far from perfect and gives rise to some objections. The author has divided all indicators into nine groups: in the first section he has brought together the indicators connected with characterizing the conditions of material life of society. Here he includes geographical environment (territory, land resources, natural resources, climatic conditions), population (number, density, movement, composition by sex, age, nationality, social groups, etc.), productive forces of society and production relations; in the second section there are brought together the indicators which characterize the social-economic types of enterprises and branches of the national economy, in the third— the territorial distribution of productive forces and the peculiarities of the economic regions, in the fourth— the process of social reproduction, in the fifth— services and health care, in the sixth— economic relations with foreign states, in the seventh— culture; in the eighth section there are brought together synthetic indicators of the national economy, in the ninth— data showing the process of fulfillment of the national economic plan as a whole.

The system of indicators of the national economy must first of all have an economic skeleton corresponding to the Marxist theory of reproduction. Such a skeleton exists in the model being analyzed: it is in the first, fourth, fifth, sixth, seventh and eighth sections. They characterize the conditions and method of production, the results of production, and the unproductive sector and the national economy as a whole.

Further, it is necessary that the statistical indicators should express the process of reproduction in its social-economic, territorial and dynamic aspects, as well as in a manner comparable to the plan. All of these aspects are important for almost all of the indicators and therefore must be included in every section, and not in the form of special sections as the author proposes (sections two, three and nine). It is not clear why the dynamic aspect is presented in the work only for population and comparison with the plan is given only for the national economy as a whole. In this way the problem of combining different aspects of the system of indicators in the model is not solved altogether successfully in our view.

In the concept of productive forces of society, in the opinion of T. Ryabushkin, are included mechanical means of labor, which are identified with instruments of production, and labor. This is incorrect since in such a case one of the elements of productive forces are excluded — objects of labor (raw materials and other materials). It appears that the indicators of circulating capital must be shifted from the fourth section to the first. In the fourth section in the group "Exchange and Distribution of the Social Product" there are presented indicators which characterize procurements, supply, sale and trade, but there are no indicators which characterize distribution, in particular distribution of the national income. In the section devoted to the unproductive sector the author does not analyze administration.

* See "Statistics," Textbook, State Publishing House, 1956, pp. 29-31.

These are only some of the comments that can be made on the model of the system of indicators of the national economy. However, this model is of definite interest and can serve as material for discussion. The basic achievement of the first chapter consists of the fact that it analyzes those methodological questions which must be confronted in constructing a model of a system of indicators. One of these questions is the interrelationship of statistics and political economy. T. Ryabushkin emphasizes that in working out a scientific system of statistical indicators of the national economy a leading role is played by historical materialism and political economy since these sciences reveal the essence of social categories, show their mutual connection and conditioning. However, in the system of statistical indicators the categories of political economy are not simply laid out in a certain sequence but are concretized, are expressed in number and measure. This is illustrated by the author in examples from the field of labor productivity (pp. 10-11).

The second important methodological question which is examined in the book is that of changes in the system of indicators. The author correctly notes that the system of indicators changes: there appear indicators which express new phenomena in the life of society, some indicators become of secondary importance or disappear altogether. Thus, the system of indicators in agricultural statistics changed fundamentally in connection with collectivization; it was enriched by a series of new indicators.

In the first chapter the interconnection of statistical indicators is also examined, chiefly with the help of balancing equations. It is true that the presentation of this question would have been more understandable if the author had illustrated the balancing equations with numerical examples. In this chapter there is also included an historical review of the systems of indicators utilized in our statistical practice. Such a review is published for the first time. Undoubtedly the reader will find in it interesting materials on the development and improvement of Soviet statistics.

The second chapter of the work under review is devoted to questions of classification of the branches of the national economy. It is clear that without a scientific classification of the branches of the national economy an analysis of the national economy as a whole, its structure, interconnections and proportions formed in the process of social reproduction are impossible. To work out such a classification it is necessary first of all to clearly define the concept "branch of the national economy." The author understands a branch of the national economy to be "the totality of enterprises and institutions fulfilling essentially similar functions in the system of social reproduction" (p. 76). Such a definition, in our view, is correct because first, the system of social reproduction is placed at the basis of the classification and second, because it predetermines the construction of the classification on the basis of a demarcation of primary enterprises and institutions. Analyzing the difficulties which arise in working out a classification, particularly in connection with the variety of factual material, Comrade Ryabushkin notes that the correctness of the classification depends to a considerable extent on the accounting unit taken as its basis, and the closer this unit is to the primary economic unit the more correct the classification. Therefore the author proposes to build the classification of branches on the basis of a grouping of enterprises and institutions.

The general model of a classification of branches of the national economy recommended by T. Ryabushkin includes the following spheres: 1) production of material goods, 2) credit, distribution, circulation, 3) services, 4) culture and health care, 5) state administration and social organizations, 6) defense, 7) other branches, 8) household economy. The first sphere is subdivided into the following branches: industry, agriculture, forestry, construction, freight transportation (by type), communication (that part which serves production) and other production. In essence, all of these are included in the sphere of material production, the labor of whose workers creates the national income. But if this is the case then it is not clear why the author excludes from the sphere of material production the subdivisions "Commodity Turnover," "Material-Technical Supply" and "Procurement of Agricultural Products," including these in the second section. In our view these subdivisions should be shifted to the first section, the second section should be excluded entirely, and the "Credit and Insurance" subdivision shifted to the third section, the "Services Sphere."

The presentation of the section "Other Branches" which includes, in part, publishing (excluding printing), is not justified. The author is not clear whether publishing work should be included in the sphere of production of material goods or not. If publishing is not to be included in the sphere of material production then it may be shifted to the section "Culture and Health Care." The presentation of household economy as a special sphere also gives rise to doubt. In our view Soviet statistics correctly conceive of household economy as household production of products absorbed in the future in the social turnover. Consequently, household economy appears as a subdivision in the sphere of material production. Thus, if instead of eight sections (spheres) we establish five, the classification will be clearer and more compact. Moreover, the author is inconsistent when he combines production of services with health care in the "system of indicators" while in the "classification" he does not relate health care to the sphere of services.

A classification of branches of the national economy includes within itself a classification of branches of production in industry, agriculture and other branches of the national economy. Comrade Ryabushkin correctly indicates that as the basis for the construction of these classifications there must be a division of production into production of means of production and production of objects of consumption which is very important for an analysis of expanded reproduction.

The book subjects to a thorough critical analysis the "International Standard Industrial Classification of All Types of Economic Activity" worked out by the Statistical Commission of the UNO which has received a rather wide dissemination in capitalist countries. In doing this the author not only notes the faults of this classification but also introduces proposals for its correction and improvement. The book also examines the newest classification of branches of the national economy as a whole and of industry used in the statistics of the USA.

In the third chapter of the book under review statistical methods of studying proportions and interconnections between branches of the national economy of the USSR are investigated. T. Ryabushkin starts from the completely correct position, in our view, that the proportions formed between the branches of the national economy and their changes may be correctly characterized only by the whole system of statistical indicators. He proposes a system of indicators consisting of four basic subdivisions: 1) population, 2) labor, 3) distribution and consumption of production and national income, 4) national wealth. The indicator of the distribution of population among the branches of the national economy gives a general notion of the economic appearance of the country. It can be derived by utilizing data from population censuses, information on the distribu-

tion of the population by branches as well as on the distribution of the able-bodied population. The following subdivision— "Labor"— consists of indicators characterizing the distribution of the employed population by branches of the national economy, the amount of labor time expended and wages. The latter indicator is also included in the distribution of the national income. The author devotes a great deal of attention to an analysis of the economic comparability of indicators of labor expenditures in various branches; he proposes that these indicators be corrected from the point of view of the effectiveness of expenditures (with the help of coefficients of power equipment or mechanical equipment of labor).

For characterizing the proportions between branches of material production the author uses indicators of gross, marketed and net production. Noting the merits and defects of these indicators, Comrade Ryabushkin prefers the indicator of net production. The question of applying indicators of fixed and circulating capital for characterizing interconnections and proportions between branches is also examined in the book.

On the basis of his own calculations the author presents a characterization of changes in the branch structure of the national economy of the USSR according to his system of indicators for pre-war years 1928, 1932, 1937 and 1940 (pp. 166-167). The figures presented in the book show the structural changes which have occurred in our national economy during the years of the pre-war five-year plans. Thus, the relative share of industry in 1940 increased as compared with 1928: in national income— from 39 to 50.2%, in gross production— from 45.1 to 57.3%, in the value of fixed capital— from 26.2 to 49.7% and in employed population— from 12.1 to 21%. One can only regret that the author did not carry through such calculations for postwar years as well. In investigating the interconnection of branches T. Ryabushkin correctly notes that the most powerful tool for studying the interconnection of branches and proportions in the national economy is the method of balances. He examines in detail individual models of balancing constructions and accounts. It is necessary to note, however, that the section devoted to studying interconnections in the national economy with the help of balancing constructions would have gained considerably if the author had supplemented the balancing models and accounts with at least illustrative figures. This section also required an analysis of the interconnections between individual economic regions. Comrade Ryabushkin's proposal on constructing special tables of interconnections of branches of our national economy in order to improve planning deserves attention.

The fourth chapter of the book under review contains interesting material devoted to statistical methods of studying proportions and interconnections between branches of the national economy of capitalist countries.

The author was confronted with a difficult task— to make comparable the richest but heterogeneous and only slightly comparable data of population censuses as well as data on national income statistics for different countries of the world and to provide on this basis a characterization of the changes in the branch structure of the national economies of these countries. Comrade Ryabushkin to a certain extent has solved this task. He has constructed tables of the distribution and dynamics of the self-employed population by branches of the national economy for the USA (1940 and 1950), England (1931 and 1951), France (1946 and 1954), Belgium (1930 and 1947), Holland (1947), Japan (1947 and 1950), Brazil (1940 and 1950), and Egypt (1937 and 1947). The author characterizes the distribution of realized national income by branches of the national economy for the USA (1938, 1949 and 1950), England (1950 and 1951) and Japan (1947, 1950 and 1951).

Although the information presented in the book covers a relatively short span of time it is nevertheless of definite interest. In particular, the data show that the relative share of the sphere of circulation measured by the size of the self-employed population in the economies of large capitalist countries has continued to grow in recent years. Thus, in the USA the share of the self-employed population occupied in trade increased from 22.1% in 1940 to 25.1% in 1950, in France—from 10.6% in 1946 to 16.7% in 1954, in Japan— from 8.1% in 1947 to 13.6% in 1950. In this unwarrented absorption of a constantly growing mass of labor power from the production of material values into the sphere of circulation there is an enormous waste of productive forces inherent in capitalism.

The analysis of the interconnection of branches in bourgeois statistics performed by T. Ryabushkin shows that a primary role is played here by the method of balances. However, bourgeois statistics lags considerably behind Soviet statistics in working out balancing problems. Only about 20 years ago individual hypothetical accounts were worked out in some capitalist countries but even here these were called forth, as a rule, by the requirements of war economics. In the work under review balancing constructions in bourgeois statistics are examined in detail, beginning with the most primitive (comparing production and consumption) and ending with the complex "input-output tables." In characterizing the methodology of constructing these tables the author presents the actual results of the calculations for the USA for 1947 performed by a group of economists and statisticians of the USA (pp. 244 et seq.). These calculations (which are to a considerable extent provisional) show the relative share of branches of the national economy in the distribution of goods and services, as well as the branch structure of the consumption of goods and services.

The last, fifth, chapter of the work is devoted to an investigation of general criteria of comparability and common measurability of indicators of the national economy. In it the author examines the problem of comparability at three levels—comparability of indicators relating to different branches of the national economy, comparability of indicators of the national economy of the USSR and of capitalist countries, and comparability of statistical data for different countries. However, he devotes basic attention to the latter two questions. Comrade Ryabushkin presents a number of examples of comparisons of concrete indicators of industrial statistics and statistics of other branches of the national economy for the USSR and capitalist countries and also analyzes the general principles of comparison of per capita indicators, the practical significance of which is very great now. In this connection the author's proposal on constructing an index comparing prices in the USSR and USA deserves attention. He presents in a general form the method of constructing this index but, of course, many questions which arise in its practical application require special examination.

T. Ryabushkin's work, "Statistical Methods of Studying the National Economy," clarifies a wide group of problems and will be read with interest by economists.

R. Evstigneev:

The National Economy of Czechoslovakia in Figures

At the end of 1957 two statistical handbooks were issued in Czechoslovakia: "Statistical Annual of the Czech-

oslovakian Republic for 1957"* and "Position of Czechoslovakia in the World Economy."† Both books present a clear picture of the successes achieved by the workers of Czechoslovakia in developing industry, agriculture, internal and foreign trade, in raising the material and cultural level of the people. Figures and facts presented in the handbooks reveal the undeniable advantages of the socialist system of economy over the capitalist.

Material in the Annual reveals fundamental changes in the social structure of the national economy of Czechoslovakia as a result of realizing the socialist revolution. In 1948 39.6% of the national income was created in the private sector of the national economy and 57.9% in state enterprises; by the end of the first five-year plan (1953), the corresponding figures were 7.9% and 86%. The share of the cooperative sector in the production of national income grew from 2.5% in 1948 to 7.2% in 1955 (p. 21).

Changes in the class structure of the population of Czechoslovakia have also found expression in the Annual. With the development of large-scale socialist industry the relative share of workers and employees in the total population increased from 61.4% in 1930 to 80.2% at the end of 1955. The relative share of private peasants in the population of the country during the same period fell from 22.8% to 13.8%. By January 1, 1956, 3.8% of the population of the republic consisted of members of uniform agricultural cooperatives of the highest types. The relative share of capitalist elements declined from 9.2% in 1930 to 0.7% at the beginning of 1956 (p. 43).

The triumph of socialist production relations in Czechoslovakian industry created the necessary conditions for a rapid growth of this branch of the national economy. The average annual growth of industrial production after 1948 was 11.3%. The volume of gross industrial production almost doubled between 1937 and 1957.

Successes in the development of industry were achieved first of all thanks to the preferential growth in the production of means of production as compared to the production of articles of consumption. The following table testifies to this.

As the material of the Annual shows, machine building—the leading branch of Czechoslovakian industry—is growing at the most rapid rate. The volume of gross production of the machine building industry increased 4.2 times between 1948 and 1956. Such a growth of machine building arose not

Growth of Gross Industrial Production (1948 = 100)

	1949	1953	1954	1955	1956	1957
All Industry	114	193	202	224	245	270
including:						
group "A"	114	219	227	247	274	301
group "B"	114	166	175	198	214	237

only from the internal requirements of the country. The output of machine building constitutes more than 40% of the exports of Czechoslovakia.

Figures on the absolute growth of industrial production in the Czechoslovakian Republic are presented in the Annual. In 1948 the production of electrical energy in the country was 7.5 billion kw. hr.; in 1957 the production of electrical energy reached 17.7 billion kw. hr. The smelting of cast iron increased during the same period from 1.6 million tons to 3.6 million tons, the smelting of steel—from 2.6 million tons to 5.2 million tons. In 1948 17.7 million tons of coal and 23.6 million tons of lignite were mined in the country. By 1957 the mining of coal increased to 24.2 million tons, the mining of lignite—to 49 million tons.

Data published in the handbook "Position of Czechoslovaki in the World Economy" shows that Czechoslovakia, occupying 14th place in Europe according to size of territory and 11th place according to population, now stands in 7th place in the mining of coal in Europe (including the Soviet Union), 4th place in the mining of lignite, and 8th place in the production of cast iron and steel. The production of electrical energy and steel as well as the mining of coal per capita of population in Czechoslovakia in 1956 was already greater than in France. In the mining of coal and lignite combined per capita Czechoslovakia was ahead of not only France but also the USA, West Germany and Belgium (p. 52).

The production of articles of mass consumption in the republic is growing at a rapid rate. According to data in the Annual the production of cotton cloth grew from 279.7 million metres in 1948 to 365.8 million meters in 1956, the production of silk cloth correspondingly from 26.4 million metres to 50.2 million meters (p. 87). The output of durable goods has markedly increased in recent years. Thus, the production of domestic refrigerators grew from 7,687 in 1953 to 58,141 in 1956, the production of washing machines from 39,703 to 253,521, television sets from 12,341 to 40,078, vacuum cleaners from 29,883 to 161,702, cameras from 65,071 to 163,759 (p. 86).

The expansion in the output of industrial production took place basically through an increase in the productivity of labor. By 1956 the productivity of labor in Czechoslovakian industry was double that of 1948 (p. 92). The number of workers increased during this period from 1,264,000 to 1,508,000 people, that is by 19% (p. 91).

In the Annual information is presented on the growth of capital investment in Czechoslovakia. A large part of capital investment in the national economy was channeled into industry. For capital construction as a whole, conducted on the basis of the state plan, more than 144 million kroner were expended in the period 1949-1956 (in comparable prices of 1956); on capital construction in industry during the same period 73.6 million kroner were spent, that is more than half of all capital investment (p. 71).

In Czechoslovakia there is currently taking place a reconstruction of the administration of industry and construction. This measure has as its purpose an increase in the role of local organs of power in the administration of the national economy, and an expansion of the economic autonomy of enterprises. The reconstruction of the administration of Czechoslovakian industry and construction will help the further growth of industrial production in the republic.

In the post-war period fundamental changes have occurred in the agriculture of Czechoslovakia. At the end of 1957 more than 65.5% of the whole area of agricultural land already belonged to the socialist sector. Successes in the development of the cooperative movement are a guarantee that in the immediate future socialist production relations will achieve a complete triumph in the agriculture of the country.

In Czechoslovakia the possibilities of increasing agricultural production by expanding sown area are limited. Therefore the growth of agricultural production is occurring the basically through an intensification of agricultural production. In this connection the mechanization of agriculture is of great importance. In the Annual there are presented data on the growth in the supply of tractors in the agriculture of the republic. In the socialist sector of agriculture in 19 there were 25,979 tractors (in terms of 15-horsepower

* "Statisticka rocenka republiky Ceskoslovenske 1957." SUS. Orbis, Praha 1957, 326 pp.

† "Postaveni CSR ve svetovem hospodarstvi." SNPL. Praha 1957, 177 pp.

units); in 1956 there were already 46,624 (p. 146). The amount of field work fulfilled by the MTS increased from 2,141.6 thousand hectares of soft tillage in 1950 to 9,471 thousand hectares in 1956. The consumption of artificial fertilizers grew sharply as compared with the pre-war period. In 1936-37 for one hectare of agricultural land there were (in terms of units of pure elements) 13.1 kilograms and in 1955-56 46.7 kilograms of artificial fertilizers (p. 148).

In the handbook "Position of Czechoslovakia in the World Economy" it is indicated that in the intensity of agricultural production (that is, in the value of output per hectare of agricultural land) Czechoslovakia now occupies the 8th place in Europe, exceeding England, France, Austria and a number of other countries (p. 56). The value of agricultural production produced per capita in Czechoslovakia is greater than in England, West Germany, and Belgium (p. 58). In the absolute level of wheat production Czechoslovakia now occupies 8th place, in rye 3rd, in sugar beet and potatoes 6th place in Europe (p. 9). Per capita, Czechoslovakia produces more wheat than West Germany, more potatoes than West Germany and France, and more pork and milk than England (pp. 77-78).

In the general balance of the national economy of Czechoslovakia foreign trade occupies a large relative share. In 1956, as material in the Annual shows, Czechoslovakia exported to various countries 7,911 metalworking machines, 9,888 tractors, 2,486 lorries and 14,718 light automobiles, 51,183 motorcycles and so on (p. 204). The foreign trade turnover of the country as a whole increased between 1948 and 1956 by 2.3 times, including an increase of 3.5 times with socialist countries and 1.4 times with capitalist countries (p. 203).

With each year the material well-being of the Czechoslovakian people is increasing. Data on the growth of the national income of the republic testifies to this. National income per capita in 1956 was double that of 1937 (p. 19). Average wages of the industrial worker increased from 1,264 kroner in 1948 to 1,508 kroner in 1956 (p. 90).

The standard of living of Czechoslovakian workers has substantially increased as a result of six reductions in state retail prices of industrial and food products (1953-1956). In the Annual figures are presented characterizing changes in the prices of products after each reduction as well as comparable prices for the same products in 1937, the year of peak production in pre-Munich Czechoslovakia. In 1956 the workers of the republic could buy with their wages almost one-third more products than in 1937. An analysis of the structure of sales of consumers goods shows that in recent years there has been a marked increase in the share of durable goods.

Data in the Annual on the growth in the average annual consumption of the most important types of food products per capita is of considerable interest. In 1936 the consumption of meat per capita was 30.4 kilograms; in 1956 it was 47 kilograms. For butter the corresponding figures were 4.8 and 5.5 kilograms; for wheat flour 80.6 and 129.1 kilograms; for eggs 131 and 172 units; beer 51.7 and 83.3 liters, and so on (p. 206). In Czechoslovakia each member of a working family consumes annually, on the average, more food products than a member of a working family in West Germany or in Switzerland. Moreover, it must be noted that in recent years in Czechoslovakia the consumption of high-calorie products, particularly meat and fats, has grown markedly.

The Czechoslovakian people are now struggling for the fulfillment of the second five-year plan for the development of the national economy (1956-1960). By the end of the five-year plan gross production of industry must increase by 56% and of agriculture by 30% as compared to 1955. The consumption of the population will grow during this period by almost one-third.

The handbooks under review convincingly show that the basic task of the second five-year plan of the republic, the completion by the end of the five-year plan of the construction of socialism in Czechoslovakia, will be successfully fulfilled.

T. Zaslavskaya:

Changes in Payments to Collective Farmers

Important changes have taken place in the development of kolkhoz production since the September, 1953 Plenum of the Central Committee of the Communist Party of the Soviet Union. Several factors caused a substantial increase in the material interest of kolkhoz peasantry in the results of its work and brought about a rise in kolkhoz production. These factors are: a substantial increase in procurement and purchasing prices of principal agricultural products, a decrease in the size of obligatory norms, the growth of the proportion of purchases in the general scope of the production realized by the kolkhozs, a change to a new system of planning agriculture, and further improvement of the material and technological foundation of kolkhoz production.

In comparison with 1951-1953, the scope of government procurements and purchases of grain in 1954-1956 rose 26%; the figure for meat in this respect was 29%; milk—40%; wool—25%; eggs—20%. During the same period the production of potatoes rose 21%; vegetables—33%; sugar beets—21%; cotton—10%; flax fiber—89%. The income of collective farms in money, which constituted 49.6 billion rubles in 1953, rose to 75 billion rubles in 1955, and to 94.6 billion rubles in 1956. The level of the collective farmers' material well-being increased sharply. The income in specie and kind from collective and personal sources of one working collective farmer rose 33% in 1957 over the 1953 level.

The wide new perspectives of the development of the kolkhoz system and the strengthening of the economics of agricultural artels are made possible by the decrees of the February Plenum of the Central Committee of the Communist Party which provide for the reorganization of MTS as well as for the sale of technical equipment to kolkhozs. The transference of tractors, combines and other agricultural machines to kolkhozs will permit a better utilization of modern technology. This will also accelerate technological progress in agriculture and raise the output of goods and of gross production per 100 hectares of land, as well as lower its cost.

An important role in the increment of kolkhoz production was played by the perfection of types of material incentives of collective farmers. Deeming the future development of kolkhoz initiative one of the principal conditions for agricultural improvement, the Central Committee of the Soviet Communist Party and the Council of Ministers of the USSR recommended in the decree of March 6, 1956, that kolkhozs independently decide questions of standardization, wages, and extra remuneration of labor.

Experience has fully demonstrated the present necessity and correctness of this most important measure. As a result of free creativity on the part of collective farmers and of their extensive sharing of experiences, greater advances have been made in the formulation and enactment of new systems of payment for work in kolkhozs than would have been possible through directives from above. At prese there is not a single region—nor probably even a single district—in which agricultural workers are not seeking and dis covering new systems for the material encouragement of co lective farmers, essential for the future improvement of production.

The manifold systems and methods of material encourage ment which are applied in various kolkhozs make the neces sity for a systematization of the accumulated experience particularly imperative. An examination of the economic essence of these various methods is also necessary. Yet, there are extremely few works on the subject at the presen time. However, we must note that a certain number of arti cles and pamphlets have been printed in recent years in wh various systems for the organization and payment of work introduced in kolkhozs are discussed to a certain degree.

Of course, it is impossible to examine (in a short review all the new phenomena in the payment for work in kolkhozs. Therefore, let us consider those questions which present th greatest interest, from a practical as well as from a theor ical point of view.

One of the most characteristic trends in the present stag of the development of labor remuneration is the tendency o an ever-growing circle of artels to adopt a system of regu lar guaranteed payment for work. This method is already used in many kolkhozs at the present time. Thus, the once held opinion that guaranteed remuneration was incompatibl with the collective farm system of ownership has been re futed by experience. The question now is to discover the b way of introducing this form of payment.

One of the ways of changing from the distribution of the actual income as it develops at the year's end to a system of guaranteed remuneration for the collective farmers' labor is regular payment in advance in money or in kind. Monthly advances at rates established beforehand would, in fact, bring the kolkhozs to a system of guaranteed payment. Many authors write about the substantial increase i the material incentive and the working activity of collectiv farmers which result from the introduction of a system of regular payment in advance. For instance, A. Korneyev i a brochure entitled "The Principle of Material Incentive— An Important Stimulus to the Development of Kolkhoz Pro duction" (Smolensk, 1956), notes that as a consequence of the change by nearly all the kolkhozs of the Smolensk region to a system of monthly payment in advance, the avera number of workday units performed by able-bodied collec tive farmers rose in the region from 290 in 1953 to 380 i 1955 (p. 11).

In a book by B. Margolit and G. Cherniavsky entitled "Monthly Payment in Advance to Collective Farmers" (Voroshilovgrad, 1956), the authors mention that in one of the kolkhozs of the Alexandrov district, Voroshilovgrad region, which has practiced a system of monthly payment in advance since 1955, the number of collective farmers who take part in the collective economy rose from 201 in 1954 to 280 in 1956 (pp. 3-4). Such a system has also bee in effect in the Zhdanov Kolkhoz of the Kstov district, Go region, since 1956. About 150 of its members who had le for the city came back to this kolkhoz. Now, they all take an active part in the work of the artel. The introduction o this method substantially increased the material interest of collective farmers at many other kolkhozs as well.

The experience of many kolkhozs shows that regular pa

ment in advance in money may be guaranteed regardless of any fortuities only if there exists a definite reserve fund for this purpose. In the article "Monthly Payment in Advance in the Kolkhozs of Kazakhstan" (in the journal, "The Economics of Agriculture," 1957, No. 3), R. Kuvatov writes: "Many kolkhozs of Kazakhstan along with the discovery of special new accounting methods have started to create reserve funds of money and kind for payment in advance. Such a measure guarantees an unimpeded distribution of advances from the very first months of the year to follow. The size of deductions made for these funds are found in the newly introduced "Regulations of the Agricultural Artel." Further in the article, it is mentioned that in the First of May Kolkhoz of the Maksaisk district, Guriev region, 10% of the income in money is deducted for such a fund, and in the Lenin Kolkhoz of the Zatobol district, Kustanai region, 20% of the sum of money apportioned for distribution on the basis of workday units (p. 87).

The "Kalinin Pravda" of October 30, 1956, wrote that 80 million rubles were deducted into reserve funds in the kolkhozs of the Kalinin region. It was noted in the April 12, 1956, issue of the newspaper "Agriculture" that the artels of the Nikolaevsk region placed about 21 million rubles into such funds in 1955. These funds are quite large in many kolkhozs. The following figures are quoted in the journal, "The Economics of Agriculture:" In the Red Order Kolkhoz of the Tambov district, Amur region, the reserve fund for the payment of labor amounted to over one million rubles at the beginning of 1957 (No. 3, 1957); in the Lenin Kolkhoz of the Galich district, Kostroma region, this fund consisted of more than 500,000 rubles ("Science and Experimentation in Agriculture," No. 1, 1957).

Since the creation of considerable funds of this kind is not yet feasible in all kolkhozs, many suggestions are offered for the discovery of additional means which would permit a more extensive introduction of guaranteed payment in advance in the remaining kolkhozs as well. For instance, in an article published in the collection, "Advances in Organization and Payment of Labor in Kolkhozs" (Government Agricultural Publishing House, 1957) the chairman of the Lenin Kolkhoz of the Galich district, Kostroma region, A. Yablokov, treats the question of the necessity of allowing the kolkhozs to deduce for advance payment 25%-40% of receivables, depending upon local economic conditions, instead of the 25% obligatory for all artels (p. 194).

Monthly advances to collective farmers on the basis of workday units performed have been firmly put into practice by many artels. According to data gathered by V. Chuvikov ("The Economics of Agriculture," No. 7, 1957), in 1956, 40% of all the kolkhozs of the entire country were using this method; 70% in the Uzbek SSR, 81% in the Turkmen SSR (p. 36). N. Bubnovsky wrote in an article published in the same issue of the journal that 80% of the kolkhozs of the Ukraine were using this system.

Simultaneously with extension of the use of a system of monthly advance payment to collective farmers in the amount of some share of their final income, the practice of full monthly reckoning with collective farmers on the basis of the fundamental payment for their work — i.e., on the basis of workday units expended— is beginning to have more extensive application.* The experiment in the Red Order Kolkhoz of Tambov district, Amur region, played an important role in the propagation of this new form of payment of labor.* Since 1955, this kolkhoz has been drawing up a single production and financial plan which encompasses all material and labor expenses for production and all income from its realization on a yearly, as well as on a monthly, basis. The plan provides for a regular payment per workday unit guaranteed by the kolkhoz: in 1956, it amounted to 6.15 rubles per kilogram of grain. Moreover, a part of the profit resulting at the end of kolkhoz's yearly economic activity is distributed on the basis of workday units.

The introduction of a new planning method and of a system of steady monthly payment of labor has had a beneficial effect upon the economics of the kolkhoz. In 1955, and in 1956 as well, the previously decided size of payment for labor, as determined by the kolkhoz, was upheld. In 1956, the Red Order Kolkhoz cleared 2,266,000 rubles from which 253,000 rubles were deducted for the increase of monthly payment, 80,000 for the encouragement of well-functioning brigades and farms, 300,000 for the reserve fund for payment of labor, 497,000 for increasing the number of head of cattle, etc.

The establishment of a system of steady payment resulted in that during 1955 and the first half of 1956, 20 families, which had left earlier, returned to the kolkhoz, and 52 families which came from cities and workers' settlements of the region were taken into the artel. Since 1956, all the kolkhozs of the Tambov district utilize this system of payment.

K. Okhapkin wrote in the journal "The Economics of Agriculture" (No. 1, 1957) on the subject of the introduction of similar systems of labor remuneration in certain kolkhozs of the Moscow region: "Recently, in several kolkhozs, the collective farmers were not granted a part of the money and products destined to be distributed per workday unit, but rather were paid to the extent of a full evaluation of the workday unit as provided for in the yearly budget estimate and the planning of production.

"In the Hammer and Sickle Kolkhoz of the Lenin district Moscow region, the planned evaluation of the workday unit (without taking products into account) was set in the yearly budget estimate at seven rubles in 1955, and at ten rubles in 1956. In accordance with this evaluation, the kolkhoz paid out to the collective farmers seven rubles during the whole of 1955, and ten rubles in 1956 on a monthly basis" (pp. 52-53).

A system of regular monthly remuneration of workday units has been introduced since 1956 in the Lenin Kolkhoz of the Galich district, Kostroma region. One kilogram of bread, 200 grams of fodder and 500 grams of milk were granted for each workday unit in this artel. If the collective farmers wished, they could receive money instead of products—on the whole, six rubles per workday unit. Discussing the experience of this kolkhoz in an article published in the journal, "Science and Experimentation in Agriculture" (No. 1, 1957), M. Gusev writes: "Unlike monthly payment in advance, under the system of regular payment employed in the kolkhoz, the workday unit is remunerated evenly during the course of the entire year.... Steady payment for workday units increases the material interest of collective farmers in collective work, strengthens working discipline,

* It is necessary to note that in the majority of cases full payment is made of the monetary part of the workday unit. Products are distributed to collective farmers at the end of the year.

* The experiment of this kolkhoz is discussed in the works of S. A. Ignatov, M. M. Stupnikov, A. P. Germanov, "A Single Production and Financial Plan for the Kolkhoz" (Second edition, revised, Government Agricultural Publishing House, 1957), S. A. Ignatov, "Advances in Kolkhoz Economics" (Government Political Publishing House, 1956), as well as in several other works.

ameliorates the organization of labor and raises its productivity" (pp. 54-55). The article further notes that in the first year of operation under a production and financial plan with steady remuneration for workday units, the income of the kolkhoz amounted to 1,650,000 rubles (784,000 of which made up the profit). Supplementary distribution of a part of this profit and a deduction of 392,000 rubles for the reserve fund for labor remuneration permitted the payment to each member of the artel of 8.60 rubles per workday unit, instead of the planned six rubles. The kolkhoz was also able to set the guaranteed payment per workday unit for 1957 at nine rubles.

Guaranteed payment for collective farm work leads to a change in the role of the workday unit in the distribution of the artel's income. In fact, if the kolkhoz grants a definite sum of money per workday unit to the collective farmer every month, then the calculation of workday units and the subsequent mechanical conversion of them into money becomes superfluous since it is easier and simpler to calculate directly the corresponding sum of money for the norm of work performed on the production which is yielded in livestock raising. And, indeed, certain kolkhozs, where the level of the development of the social economy and the available reserves guarantee a definite level of labor remuneration, are now changing to accounting and evaluation of labor directly in terms of money.

V. Voropaev in an article published in "The Economics of Agriculture" (No. 8, 1957), writes that in the Bolshevik Kolkhoz of the Shostkin district, Sumi region, the accounting and evaluation of the work of collective farmers is not conducted in terms of workday units, but directly in terms of money. In this kolkhoz, the system of standardizing and remunerating work has remained on the whole unchanged; however, the evaluation of the norm of work is expressed in rubles rather than in workday units. Thus, in return for the performance of a daily norm of sugar beets sowing with a sower (12 hectares), a collective farmer receives 45 rubles; for harvesting 15 hectares of winter grain a tractor operator is paid 60 rubles, etc.

An interesting experiment in the remuneration of kolkhoz labor is discussed in an article by G. Stamov and G. Sevlikiantz published in the journal "Agriculture of the Tadzhikistan" (No. 10, 1957). In the Moskava Kolkhoz of the October district, Tadzhik SSR, all of the agricultural tasks are divided into nine groups. A definite evaluation in money is set for each group, on the basis of the evaluation of the workday unit at 15 rubles. The daily wages, assigned to collective farmers according to established rates for tasks performed, constitute the guaranteed part of their yearly wages and are paid out on a monthly basis. At the end of the economic year, there is a supplementary distribution among the members of the artel of the share of the planned profit which remains after the kolkhoz covers the expenses for production. This distribution is proportional to the sum of the principal yearly wages.

The problem of the distribution of products among collective farmers arises when the change to accounting of labor in rubles takes place. In the Moskva Kolkhoz there is no distribution of income in kind at all. The collective farmers receive all the necessary products as part of the remuneration for their work in money on the basis of retail or commission trade prices. This problem is dealt with in a somewhat different manner in the Kirov Kolkhoz of the Peremisl district, Kaluga region. In an article published in "The Economics of Agriculture" (No. 2, 1957), D. Yakushkin notes that the guaranteed payment of labor is set in this kolkhoz at eleven rubles per workday unit. The kolkhoz proposes to pay seven rubles in money and four rubles in products (at purchasing prices). If the farmer wishes, he may receive the whole amount in cash. A meeting of the collective farmers of the Bolshevik artel of the Shostk district, Sumi region, V. Voropaev reports in the brochure called "How the Kolkhozs are Perfecting the Organization and Remuneration of Labor" (Government Agricultural Publishing House, 1957), has taken the following decision: The collective farmers may receive as part of their wages a certain share of products at government purchasing prices. The quantity of products which the members of the artel may obtain in the kolkhoz depends on the size of the income they have received; however, it should be no greater than 20-25 kopeks per each ruble earned. A list is made of the products obtainable by the collective farmers: wheat, rye, potatoes, fodder, etc.

Writing on the subject of the advantages of a system of accounting and payment of labor in money, G. Stammov and G. Sevlikiantz mention that as a result of their further development, the kolkhozs have become large, multipartite economies, which have become stronger in respect to organization and economy. The result of this development was the appearance in many kolkhozs of economic conditions permitting monthly payments in money in stable quantities (p. 34).

It is our opinion that the conclusion drawn by the authors as to the feasibility of introducing a system of accounting and payment of labor in terms of money are thoroughly correct.

***

The introduction of a system of monthly payments in advance, the change to guaranteed payment per workday unit and then to the remuneration of the work of collective farmers in rubles, call for order in systems of counting up workday units and in the standardization and regulation of labor. At the present time certain progressive kolkhozs are carrying out standardization of principal tasks on the basis of chronometric observations of the work of collective farmers. One of the chief factors which stands in the way of the further introduction of scientific methods of standardizing labor into practice in kolkhozs is the lack of qualified standardization personnel both in artels and districts. Such difficulties are surmounted by the kolkhozs in various ways. In an article published in the collection, "Advances in Organization and Payment of Labor in Kolkhozs," N. Tikhomin mentions that in the Kommunar Kolkhoz of the Nikolaevsk region, all the work of technical standardization is assumed by the assistants of the leaders of production brigades; in the Budenni Kolkhoz, serviced by the Shevchenko MTS of the Odessa region, this task is performed by the accountants (p. 121).

In another article published in the same collection, the chairman of the Voroshilov Kolkhoz of the Tretiakov district, Altai region, I. Shumakov, mentions that there is a standardization specialist in their artel who is free from any other duties. Because of improved estimates, re-adjusted working conditions and increased productivity of labor the kolkhoz was able to economize 35,000 workday units and free 50 persons for production work. In the author's opinion, the problem of creating the post of standardization expert is now important in every large kolkhoz.

Some authors feel that the conditions in which a substantial number of agricultural tasks are performed are not essentially different in the various kolkhozs of a single district. In order to facilitate the standardization of labor in each kolkhoz in respect to tasks, the performance of which depends very little upon concrete conditions of production, it is proposed that standard norms of work be formulated for the district. The chief accountant of the Red Banner Kolkho

of the Kaa-Khem district, Tuva autonomous region, D. Kritzin, in an article published in the journal "Siberian Agriculture" (No. 2, 1957), proposes that the standardization of this kind of work be entrusted to a commission which will include one or two representatives from each kolkhoz chosen from among specialists or accountants.

The question of the standardization of collective farm labor is discussed far too little in economic literature. Yet, still less attention is devoted to such an important factor in strengthening material encouragement of collective farmers as a proper wage scale for their work. Therefore, the effort of G. Kurss in raising this question in an article published in "Advances in Organization and Payment of Labor in Kolkhozs" is quite valuable. He feels that the existing "multiplicity of evaluation scales makes the calculation of workday units complicated. Too extensive differences in the evaluation of various tasks create an abnormal situation, when several small tasks which are, however, extremely important to the kolkhoz, remain unfulfilled, or if they are, they are poorly performed. It would be necessary to lessen differentiations in evaluating labor... We feel that it would be expedient to establish a tri- or quadri-partite system of evaluating labor" (pp. 107-108).

The question raised by Comrade Kurss does indeed warrant study and discussion. However, it seems to us that even if a certain cut in the number of categories in the wage scale is expedient for the simplification of the system of kolkhoz labor evaluation, the reduction of differentiation in payment for work which belongs to either extreme of the scale could scarsely be considered opportune for the majority of kolkhozs at the present time. A widespread utilization by kolkhozs of many systems of additional payment for the performance of important and urgent tasks indicates rather that the existing level of differentiation is in many cases insufficient.

One of the important problems in finding an adequate payment scale for collective farm work is the establishment of proper equivalence between the level of payment for labor in plant growing and in livestock raising. Moreover, this problem becomes particularly acute when workers of both kinds are simultaneously members of single complex brigades. At the present time, in connection with a sharp increase in the productivity of livestock farms and in the mechanization of several difficult tasks in this branch of agriculture, the average wages of workers of this branch of agriculture exceed two or three times the average remuneration of laborers working on fields. A. Baev, in an article published in "Advances in Organization and Payment of Labor in Kolkhozs," notes that a revision of the evaluation of work in different branches of the kolkhoz on the basis of workday units is the most important problem in the field of organization and remuneration of collective farmers' work. Besides, he feels it is indispensable that "remuneration of work, particularly in complex brigades which also deal with livestock raising, should be so organized that the workers in cultivation, since they produce fodder, be interested in a large output of milk and of livestock products" (p. 29).

An article by I. Zvirbulis published in the journal "The Collective Farmer of Soviet Latvia" (No. 8, 1956) is also concerned with the necessity of increasing the level of wages of field cultivation workers and in particular with the problem of heightening their interest in the development of livestock raising. In the author's opinion, "it would be best if the work of cultivators were additionally paid for with products of livestock raising. This would raise the cost of the workday unit in field work, and at the same time it would demonstrate that such work is closely related to the raising of livestock" (p. 10).

Striving to provide guaranteed payment for the work of collective farmers and protect the economy against possible accidents, the kolkhozs of certain zones of the country place the wages of labor—not only of farmers engaged in livestock raising, but, also, of those working on crop growing—in direct dependence upon the quantity of production yielded; in other words, these kolkhozs are applying a system of payment for work based upon a centner of the harvested crop. The question of paying farmers engaged in field work on the basis of a centner of yield is not new. It was extensively discussed during the last decade. Moreover, this method of payment is considered the most progressive under all conditions for a large part of tasks. For example, N. Nazarev wrote in the journal "Kommunist" (No. 15, 1954) that "kolkhozs should be emphatically encouraged to change to a system of calculating workday units in terms of a centner of the yield not only of vegetable, but also of grain crops" (p. 72). Such a categorical statement about the progressive role of payment from the centner of yield in the kolkhozs of all regions, however, can scarcely be recognized as accurate. In order for this system to be utilized successfully, it is necessary that several conditions be satisfied, and among them: the existence of more or less uniform conditions of production for all field cultivation (or complex) brigades, a developed and efficient system of inter-economic planning, etc. In the kolkhozs where the indicated conditions are on the whole satisfactorily met (for instance, in the kolkhozs of Central Asia which grow cotton, as well as in certain kolkhozs of the Ukraine and of the Stavropol and Krasnodar regions), wages of labor on the basis of a centner of production, according to the reports of local workers, has had positive results and has increased the material interest of collective farmers in the results of work. However, even in this case, the work of collective farmers must actually be remunerated not according to evaluations drawn up beforehand, as a certain share of one centner of each kind of product, but rather according to evaluations perfected in accordance with an actuallly performed cycle of tasks. As far as the artels of the central, northwestern, western and southeastern zones of the European USSR are concerned, the introduction of a system of paying for labor on the basis of a centner of crop is, as a rule, undesirable, because of sharp fluctuations in the success of harvest due to weather conditions, because of considerable variation in soil conditions, etc.

***

Simultaneously with their efforts to perfect a system of remuneration for the work of their farmers on the basis of workday units performed, the kolkhozs are devoting a great deal of attention to the formulation of methods of additional payment for labor which are in the closest possible agreement with the concrete conditions of their operation. Consequently, the problem of the economic foundation, perspective and concrete formulation of systems of supplementary payment in kolkhozs occupies one of the more important spots in economic literature. In a pamphlet entitled "The Workday Unit and Its Remuneration" (Government Agricultural Publishing House, 1956), M. P. Osadko writes "The dependence of each collective farmer's income upon the result of the entire collective's work, which stems from the cooperative nature of ownership, necessitates special measures. These must guarantee to brigades, teams, and individual collective farmers, who are working conscientiously and successfully, not only a relatively higher income, but also an absolutely high income, which corresponds to the level of productivity of labor achieved by the brigade, team, or farmer... The essence of supplementary pay is that a part of the products put out by the brigade, team or farmer

does not enter into the general payment fund of the kolkhoz, but rather is distributed among the members of the brigade or team which have attained certain definite indexes in their work" (pp. 114, 115).

Additional pay for work is especially important for the improvement of the standing of economically weak collective farms. Thus, the chairman of the Lenin Kolkhoz of the Mstislavl district, Mogilev region, M. Andrienko writes the following in the collection "Advances in Organization and Payment of Labor in Kolkhozs:" "I have found through personal experience that it is only by means of additional payment that a kolkhoz and its economy can be raised. This is necessary in order to encourage people while the general workday unit is not yet highly remunerated" (p. 240).

A similar point of view is expressed in an article published in the journal "The Collective Farmer of Soviet Latvia" (No. 9, 1956): "In those kolkhozs where productive life has 'frozen up' and the collective farmers feel indifferent to the fact that the harvest may perish, a great stimulus is to be found in a relatively high supplementary payment in money or kind for each workday unit performed or for the successful completion of a certain task. However, such additional payments are applied only as temporary measures, effective until the pay for the workday unit is adequately high." Many other authors also stress the importance of supplementary payment in revitalizing economically weak collective farms.

The systems of additional payment utilized by various groups of kolkhozs are quite different one from another. In kolkhozs which are not economically strong, the most widespread system of this kind consists of additional payment for the completion of different tasks in cultivation of fields (in terms of a percentage of the gross production) and in livestock raising. A characteristic feature of the systems of additional payment of work mentioned here is the fact that the size of the material encouragement of collective farmers is determined by the same indexes as the calculation of workday units, in terms of the scope of tasks performed in cultivation of fields and of the yield from livestock raising. In this manner, they are directed not so much at the material encouragement of advanced workers who attain the highest results as at providing guaranteed remuneration for the work of all collective farmers who are involved in the more responsible tasks of field cultivation and who work in the more important branches of livestock raising. It is the opinion of several authors that such a system of additional payment has a positive effect. Thus, in several kolkhozs of the Gorki region, the introduction of supplementary payment in the form of two to five kilograms of grain for each workday unit performed in all aspects of harvesting tasks has resulted in the shortening of grain harvesting schedules from 30-40 days to ten days, and of those of winter crops, to four to six days.

At the same time, many kolkhoz chairmen assert that the utilization of "supplementary payments" of all kinds for the performance of individual tasks, and of the same on the basis of gross production in livestock raising, weakens the system of standardization and evaluation of these tasks in workday units, undermines the principle of equal payment for equal work, and places certain groups of collective farmers in a privileged position in comparison with others. For example, the chairman of the Voroshilov Kolkhoz of the Khoten district, Sumi region, G. Nosko, in an article published in "Advances in Organization and Payment of Labor in Kolkhozs," writes the following: "The negative character of supplementary payment from gross production is that it is often granted not at the expense of the supplementary revenue of kolkhozs, but rather at the expense of the planned income which is destined for the basic payment for the work of collective farmers... Furthermore, additional payment from gross production disorganizes the productive process in that the members of the kolkhoz, as a rule, unwillingly go to work on such locations where this payment is not granted or granted in insubstantial amounts" (p. 243).

One can judge that the majority of authors look upon this form of material incentive as a temporary measure intended for the improvement of an underdeveloped economic unit. In artels which are on a stronger economic footing and where the foundation of the remuneration for work is sufficiently developed and stable, a system of additional payment based upon the degree of success of a crop and on the improvement of yield in livestock raising, is considerably more widespread. Moreover, some kolkhozs grant supplementary pay for exceeding either the planned indexes of harvest results (and those of productivity in livestock raising), and/or the average actual crop in the kolkhoz for the current year, and/or the average results of preceding years, and, finally, the specially formulated tasks which are performed alongside the plan of production and are designed only for the purpose of obtaining extra pay. The kolkhozs are granting additional payment either in kind or in money, or in mixed form, evaluating it in terms of either straight or progressive rates. The actual systems of extra payment for labor in force at various kolkhozs are extremely diverse.

R. Kuratov and D. Tovma write in a brochure entitled "Monthly Payment in Advance and Supplementary Payment in Kolkhozs of Kazakhstan" (Alma-Ata, 1956), that in the Ulguli Kolkhoz of the Irtish district, Pavlodar region, the additional payment for grain cultivation is granted in the scope of 15% to 25% of the cost of the harvest above the plan, in terms of government purchasing prices. In an article by S. Skorniakov published in "Science and Experimentation in Agriculture" (No. 5, 1956), it is observed that in the Boretz Kolkhoz of the Bronnitzk district, Moscow region, the farmers receive by way of additional payment from 5%-10% up to 20%-30% of the products put out above a certain level of yield established by the kolkhoz's administration.

Certain deffects are, however, inherent in additional payment. Its limited nature in respect to the over-fulfillment of planned production becomes apparent, particularly because the indexes which are at the foundation of its formulation do not account for such an important part of the productive process as the level of material and labor expenses for the output of a unit of production. In this connection, the practice of progressive kolkhozs has brought forward a new system for the material stimulation of collective farmers—extra payment in money based upon the results of accounting within the economy.

The first step in this direction is a system of payment for the labor of collective farmers which depends upon the fulfillment of the plan for gross production on one hand, and of the plan for production expenses and performance of workday units on the other. M. Mikhailov and B. Sinzini communicate in "Science and Experimentation in Agriculture" (No. 12, 1957), that in the Lenin Kolkhoz of Piatigorsk district, Stavropol region, a brigade which has reached a higher level of output (as expressed in money) than is average for the entire kolkhoz, receives from 25% to 35% of the cost of production put out above the average level of fulfillment of the plan in the kolkhoz. If the plan of production is fulfilled, the economy of material and money means which results is added to the production achieved, whereas over-expenditures are subtracted from it.

G. Germanov and T. Malofeyev report in the journal "Th

Economics of Agriculture" (No. 3, 1957), that in the Red October Kolkhoz of the Tambov district, Amur region, a brigade or livestock farm which succeeds in lowering expenses for production receives for the purpose of supplementary distribution on the basis of workday units 25% of the profit over and above the plan. A similar form of payment is at present being introduced in several other kolkhozs.

A large number of new problems will arise before the kolkhozs in connection with the reorganization of machine-tractor stations and the transfer of MTS equipment to kolkhozs. One of them is the question of the system of payment for the work of the mechanized cadres which will be transferred from MTS into kolkhoz payrolls.

Many authors note that the wages of MTS workers are not sufficiently related to the result of their work. Thus, Y. Rotin wrote the following in "Science and Experimentation in Agriculture" (No. 2, 1957): "The wage scale of tractor operators, specialists, and supervisors of MTS must be placed in strict dependence upon the result of harvest." Criticizing the existing system of payment for the labor of MTS workers, A. Tokarev writes in the same journal (No. 3, 1957), that "A tractor operator...working a trailer combine, is materially interested in harvesting the largest possible area, without any relation to the grain it yields. It is even more interesting for him to work upon lots with lesser yield, for he can thus work upon a larger number of hectares and perform more workday units."

The standards and evaluations established for the performance of individual tractor jobs set by a centralized administration were of course unable to foresee and take into consideration the concrete conditions of one or another MTS and often proved to lack correspondence among themselves. The Director of the Krasnokholm MTS of the Kalinin region, N. Gruzhov, wrote in the journal "The Economics of Agriculture" (No. 3, 1957) that "The members of MTS have so well mastered many tasks—all kinds of plowing, cultivation, harrowing, flax cultivation and several others—that they perform them 50% to 150% over the norm. This explains the fact that operators of flax-cultivating combines earn from 4,000 to 7,000 rubles a month and tractor operators perform up to 1,600 workday units in a season.

"The norms of performance are exaggerated on such jobs as stacking, hauling of hay and straw, planting potatoes and sowing maize, drying and sorting grain, cutting straw, and grinding grain. Therefore, the machine operators who perform these tasks are earning extremely little and shy away from them under various pretexts."

The sale of MTS equipment to kolkhozs and the unification of mechanized and kolkhoz cadres within a single enterprise under a single administration opens wide possibilities for improvement and coordination in the remuneration for the labor of various categories of workers, for a fuller account of the particular conditions of production in different kolkhozs and for increasing the material interest of collective farmers in the final result of production.

Analyzing a comparatively limited, but quite interesting, experimentation in introducing new systems of payment for the work of collective farmers, we can conclude that the principal trends of the further development of systems of payment at the present are: a preponderant utilization of systems of payment in money, as opposed to payment in kind; the introduction and perfection of the self-supporting principle within the economy; the further strengthening of the principle of guaranteed remuneration for the work of collective farmers; the transference by many kolkhozs to a system of regular monthly payment, and, finally, to the practice of accounting and paying for work directly in money.

L. Gelberg:

Economic Investigations of the Institute of Housing, USSR Academy of Construction and Architecture

In its work upon the creation of rational types of houses and apartments, the staff of the Housing Institute of the USSR Academy of Construction and Architecture devoted a great deal of attention to the economic aspect of this problem. These problems become particularly important in the light of decisions taken by the Party and the Government concerning the intensive development within the next few years of housing construction. It is important to observe that until recently, housing projects were designed for occupancy on per-room and per-apartment basis. As a result of this, the rooms in them were of similar size and often were isolated one from another. An apartment was projected for the use of two or three families. This necessitated the widening of the kitchen, passageway, and bathroom areas. These factors brought about an increase in the cost of this type of apartment, while they did not allow providing the principal bulk of the population with private apartments.

At the present time, the given problem must be solved under one absolute condition: not to exceed expenses as they were under the per-room system of housing construction. Accordingly, the staff of the Housing Institute studied the conditions of settlement of the new housing developments in various cities and workers' villages, analyzed the materials submitted to the All-Union contest for economical apartments, and familiarized itself with foreign experiments in housing construction. This permitted the formulation of the principal decisions to be taken in planning economical apartments which will be constructed during the Sixth Five-Year Plan. The apartments are destined for occupancy by one family; they have several characteristic traits. The size of the rooms is differentiated according to the purpose of each, part of them are to be connecting, and the size of utility rooms and passageways is reduced, since each apartment is designed for occupancy by fewer persons. Careful study of sanitary and mode of life requirements has warranted the reduction of ceiling heights to 2.7 meters. This will result in considerable savings of building materials and construction costs.

At the present time, there are three projected types of apartment houses for single-family occupancy: houses which in general have two- or three-room apartments which include all types of facilities, with bath; houses with two-room apartments which are equipped with showers; single-room occupancy houses for single people or two-person families. Construction of all three types will provide the bulk of the population with private apartments without increasing building costs per family.

The choice of more economical types of buildings was another very important problem studied by the economic survey department of the Institute. Extensive study in this field showed that four- or five-storied buildings were most economical in large- or average-sized cities as far as construction and maintenance expenses are concerned. The construction of many-storied buildings with elevators (six stories and above) is expedient only in large cities, or if extensive outlays are necessary for the creation of city utilities and transport networks, or when many housing units are torn down for reconstruction purposes. A small building (two-three stories) is preferable in small cities and settlements. The lowering of the cost of housing construction according to this scheme results mainly from widespread utilization of local materials and simplified building methods.

In order to discover means of lowering construction costs the influence of the clearance gauge and configuration of buildings upon technological and economic factors was studied. It was discovered that increasing the length or width of a building and simplifying its configuration reduce not only the costs of construction, but also those of maintenance. The materials of another survey showed that the cost of housing construction can be lowered if basements are planned to correspond strictly to their actual usage. The necessity for such a study resulted from the fact that in recent years very extensive basement space was being projected in buildings. A wider utilization of ground floors in lieu of basements will not only improve the quality of houses, but also will allow the reduction of the construction cost.

A great discussion arose among architects on the subject of whether shops, recreation, and cultural centers should be placed in apartment houses or whether special buildings should be erected for that purpose. Many-sided study of this problem showed that the second alternative is preferable not only from the economic viewpoint, but also as far as maintenance and utilization are concerned. Only small enterprises and establishments should be placed in apartment houses.

The introduction of more rational and progressive building methods has been very significant in the economics of housing construction. The increased industrialization of building materials production through the utilization of large-size elements which are prefabricated to the greatest possible extent is a decisive factor in this respect. One of the most important prerequisites for the industrialization of construction is the widespread development of rational-type projects. The economic survey department conducted a special study on the influence of the quantity of type sizes of large wall blocks upon the technological and economic indexes of their production. This department also studied the question of the savings resulting from various types of foundations, walls, roofings, inner and outer wall surfaces.

These surveys showed that economical construction methods are insufficiently employed in building projects; reinforced-concrete foundations and wall blocks, progressive wall and floor covering materials and rational carpentry work are rarely put into use. At the same time, the prices for many progressive materials, such as large blocks and panels of light concrete, are expensive beyond justification. This leads to a substantial increase in the cost of housing construction.

Many of these problems are examined thoroughly in a work published by a group of the Institute's staff, entitled "The Principal Problems in Lowering the Cost of Housing Construction" (1957). It contains tentative figures on the economic effectiveness of various measures and proposals for reducing the cost of housing construction.

In many specialized works, the problems related to the

comprehensive evaluation of projects on the basis of construction and maintenance costs are yet insufficiently discussed. In connection with this a survey on the subject of "The Influence of Housing Planning Decisions upon the Level of Expenses for Maintenance" was included in the plan of the Institute's research. The department of economic survey has worked out a method for the evaluation of the economical nature of project decisions. This body also formulated a nomenclature of indexes for this purpose and has shown how these are to be determined and applied.

The results of surveys conducted by the Housing Institute allowed its staff to prepare for the Third All-Union Conference on Housing some final data and proposals for the Seven-Year Plan of housing construction development (1959-1965). In particular, on the basis of the generalization of the experience accumulated in recent years, there is a proposal for a plan of construction according to types of apartments, number of floors, materials for walls, and types of equipment, which will result in an increase in the solidity and quality of buildings, chiefly through the widespread utilization of reinforced concrete. An improvement in maintenance and living condition features is expected on the basis of the equipment of the housing units with all kinds of commodities. Definite measures for the perfection of planning decisions and choice of more rational types of buildings are offered in order to allow a reduction in the cost of housing construction.

In 1957, the Institute formulated and introduced to the Government Building Commission of the USSR certain proposals for the improvement of statistical planning on the basis of inter-related accounting of the existing housing facilities as well as of the projected goals in housing construction. It has been suggested that data on the quantity of potential building space, apartments, rooms, conditions of their occupancy, utilization of ground floors and basements, etc., be added to the information presently available from the Central Statistical Administration of the USSR. In order to account for new housing construction, it is suggested that data on the cost of one square meter of living space in various types of buildings be made available as well.

In 1958, the department of economic survey of the Housing Institute is pursuing its work in defining more perfected methods of housing construction which enable it to become less expensive.

V. Shabalin:

What Scientists-Economists of People's China Are Doing

The center of the economic sciences in the CPR—the Institute of Economics, Academy of Sciences of the Chinese People's Republic—was created at the end of 1952. At first it consisted only of two departments—the History of Economics, and a department dealing with economic problems. The Institute has grown considerably under the People's Government. There are now about 110 scientists on its staff (as opposed to 30 in 1952) who work in nine departments: Political Economy, History of the National Economy, History of Economic Thought, Distribution of Production Forces, Industrial Economics (created in 1956), Agricultural Economics, Economics of the Domestic Crafts Industry, Finance and Trade, and World Economics.

In addition to the Institute of Economics and its branch in Shanghai, several affiliated institutes have been opened. Their staffs are called upon to study the principal theoretical questions of the economic sciences and to solve key problems in the development of the national economy of the Chinese People's Republic. The Shanghai branch of the Institute of Economics is mainly concerned with the study of the appearance, development, and transformation of capitalism in China. Research on this subject covers a period which extends from 1840 (the beginning of the "Opium" War) until 1956, the year of the completion of the principal reforms in capitalistic trade and industry in Shanghai. In Guan Chow and Ukhani, new branches of the Academy of Sciences are also being organized. They will include departments which will study economic problems.

The Institute of Economics of the CPR Academy of Sciences devotes considerable attention to the collection, analysis, and editing of materials on the economic history of China. The departments of the History of the National Economy and of the History of Economic Thought are generally in charge of this work. Among the works already published we may point out the collection entitled "Selected Statistical Materials on the Contemporary Economic History of China," which contains a considerable amount of data on foreign trade, industry, transport, and agriculture, and the "Collected Articles on the Contemporary Industrial History of China (1840-1914)," published in four volumes. The first two volumes of the collection "The Contemporary History of Domestic Craft Industry," and "The History of Chinese Agriculture (1840-1937)," in three volumes, have also been published.

The importance of these works is considerable. As early as in 1942, Comrade Mao Tse-tung in an article entitled "Proper Style of Work in the Party" stressed the necessity of writing theoretical works which would properly reflect the process of the economic development of China beginning with the "Opium" wars and ending with the present time. The materials published by the Institute have laid a firm foundation for profound theoretical investigation in the realm of the contemporary economic history of China and are widely used in teaching.

At the present time, a collection on the subject of the history of Chinese foreign trade (1840-1895), railroad and water transport, and the economic aggression of imperialism is being prepared for publication. The Department of the History of Economic Thought of the Institute is about to publish a work entitled "Economic Thought in China from the 'Opium' Wars Period to the Taiping Rebellion." The staff of this department also works with questions of the Chinese Communist Party's economic policy and upon economic problems pointed out in the works of Comrade Mao Tse-tung.

In cooperation with the appropriate establishments and departments of the CPR, the Institute of Economics pursues the study, collection, generalization and analysis of materials concerning the economy of New China. This work is chiefly carried out by the departments of Distribution of Production Forces; Industrial Economics; Agricultural Economics; Finance and Trade; and Domestic Craft Industry Economics. For example, the Department of the Distribution of Production Forces has completed an extensive research project—"The Economic Problems Connected with the Construction of the Sanming Reservoir and Hydroelectric Station on the Hwang Ho River." This work was performed at the request of the planning commission, which directs the utilization and regulation of the water resources of the Hwang Ho river, which operates under the Government Council of the CPR. The staff of the Department also studied the economic problems related to the struggle against erosion in the middle and upper Hwang Ho basin and offered a project for the di-

vision of this region into economic districts. Since 1956, the staff of the Institute has taken part in the activity of the Commission which plans the utilization of the Yangtze-Kiang river waters, and works under the direction of the CPR Government Planning Commission in solving the problems of the comprehensive division of China into economic districts.

A Department of Industrial Economy has recently been created at the Institute. Its staff, in cooperation with the Ministry of Labor and the Central Committee of the Chinese Federation of Trade Unions, works upon questions of wages in industry and studies questions of price formation and branches which produce consumer goods. In particular, in cooperation with the Ministry of the Textile Industry, it is studying the question of the prices of textile goods. One of its research projects is devoted to the problem of finding an expedient system for managing industrial enterprises.

The Department of the Economics of Domestic Craft Industry published the "Selected Materials on Domestic Crafts in China (1950-1953)" which contains data on the state of domestic craft industries in China—in terms of districts and branches, and in which its social structure and paths for its transformation are shown. The collection entitled "Individual Domestic Craft Industry of the CPR in 1954" has also been published. At the present time, this department is studying the activity of supply-distribution and production cooperatives in several cities of China, as well as the development of domestic craft industry since the country's liberation.

In 1957, the Department of Agricultural Economics published the "Collected Data on the Subject of Production Coordination in Agriculture During the Period of Reconstruction of the National Economy (1949-1952)." A volume of collected articles dealing with the period of the First Five-Year Plan (1953-1957) is in preparation. The department studies problems related to the development of a system of agricultural cooperation, as well as the agrarian situation before the Japanese aggression in the Usi and Baodin regions.

The staff of the Political Economy Department is working on a series of articles entitled "A Critique of Keynesianism" as well as other articles in which the social "theories" of right-wing elements—Litsian Han and Fei Siao-tung—in the realm of the methodology of the survey of agriculture are criticized. The survey of socio-economic formations in national minority areas is continuing. A study has been initiated of agrarian relations in China before the land reforms, as well as of several questions related to the peaceful socialist transformation of capitalist industry and trade in the transitional period in the CPR.

The Institute of Economics of the CPR Academy of Sciences devotes a great deal of attention to scholarly discussions of the most important theoretical problems of political economy and of other branches of economics. The members of the Institute actively participated in the debates involving "The Economic Laws Governing the Transitional Period in China" and "The Character of Per-Land Area Rewards in Agricultural Cooperatives of Semi-Socialist Nature."

The struggle against bourgeois and rightist elements in the realm of economics and the critical analysis of their views occupied a very important place in the Institute's activity in 1957. A large part of the fifth issue of "Tsintsi-yantsu" of the same year was devoted to this struggle. It contained articles of well-known Chinese economists—Siu Mu-tsiao, Lo Gen-mo, Van Si-hua, et al.—which criticized the views of a group of right-wing elements led by Chen Jen-han. In the course of this ideological struggle, the attacks of right-wing elements upon Marxist-Leninist political economy were foiled; their bourgeois premises and their political designs, directed, in the final analysis, toward the reintroduction of the old order in China were unmasked.

The staff of the Institute of Economics has developed and approved a long-range plan for research work for 1956-196 This "big plan" for the development of economic sciences i China provides for research work on a large scale, the solu tion of several very important general, complex and specia ized problems, and for the publication of many collected ar ticles, textbooks, and monographs. For example, in connec tion with the long-range plan, the following problems of political economy will be studied: "The Economics of the Transitional Period in China;" "Economic Laws and Categories in Socialist Production;" "Socio-Economic Formations in Chinese History;" "The General Crisis of Capitalism;" "The Development of World Capitalism under New Historical Conditions."

The study of several other comprehensive problems of th socialist order is planned: "The Tempos and Proportions o the Development of Various Branches of the National Econ omy;" "Production, Distribution and Utilization of the Natio al Income in China;" "How the Productivity of Labor Can B Boosted;" "The Relation of the Personal Material Interest the Workers to Social Interests:" "The Relationship betwee National and Group Ownership;" "Problems of Population Distribution in China;" etc.

An extensive program of research is planned on the subj of branch economics; history of the national economy; hist of economic thought and world economics.

The publication of many important scholarly works is planned over a period of 12 years. Among them will be textbooks on economics of the transitional period in China; political economy; history of the national economy and history of economic thought.

Each year the international ties of the Institute of Economics become stronger and more extensive. The Institute has been host to economists from the Soviet Union, Rumani the GDR, Poland, India, Great Britain, Japan, and other co tries. Representatives from the Institute have, in turn, vis scientific centers abroad, taking part in several internatio economic conferences. The Institute also regularly excha its publications with many foreign organizations working i economic sciences.

SOVIET EDUCATION

Complete English Translation of the Monthly USSR Journal Sovetskaya Pedagogika. Journal of the Russian Academy of Pedagogical Science.

An authoritative source on Soviet educational developments.

Discusses questions such as:

technical education and the humanities — teaching methods — Soviet education theory — the role of education in Soviet life — the position of teachers — the responsibility of parents — handling juvenile problems — industrial training — language training — gifted children

This is the journal that supplies the answers of Soviet educators themselves concerning the methods, plans and goals of Soviet education.

ADVANCE SUBSCRIPTIONS NOW BEING TAKEN

Vol. I, No. 1, will be ready November 15, 1958. $70.00 per year.
(12 issues)
$20 per year for persons
associated with institutions already subscribing.

An Essay by the Leading Soviet Economist

EUGEN VARGA

PROBLEMS OF THE POST-WAR INDUSTRIAL CYCLE AND THE NEW CRISIS OF OVERPRODUCTION

$1.00 per copy

INTERNATIONAL ARTS & SCIENCES TRANSLATION SERVICE

Fast, accurate translations for individuals, institutions and businesses by highly skilled translators at a moderate cost. For information, write —

INTERNATIONAL ARTS AND SCIENCES PRESS
33 West 42nd Street
New York 36, N.Y.